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Drug and Cosmetic Industry

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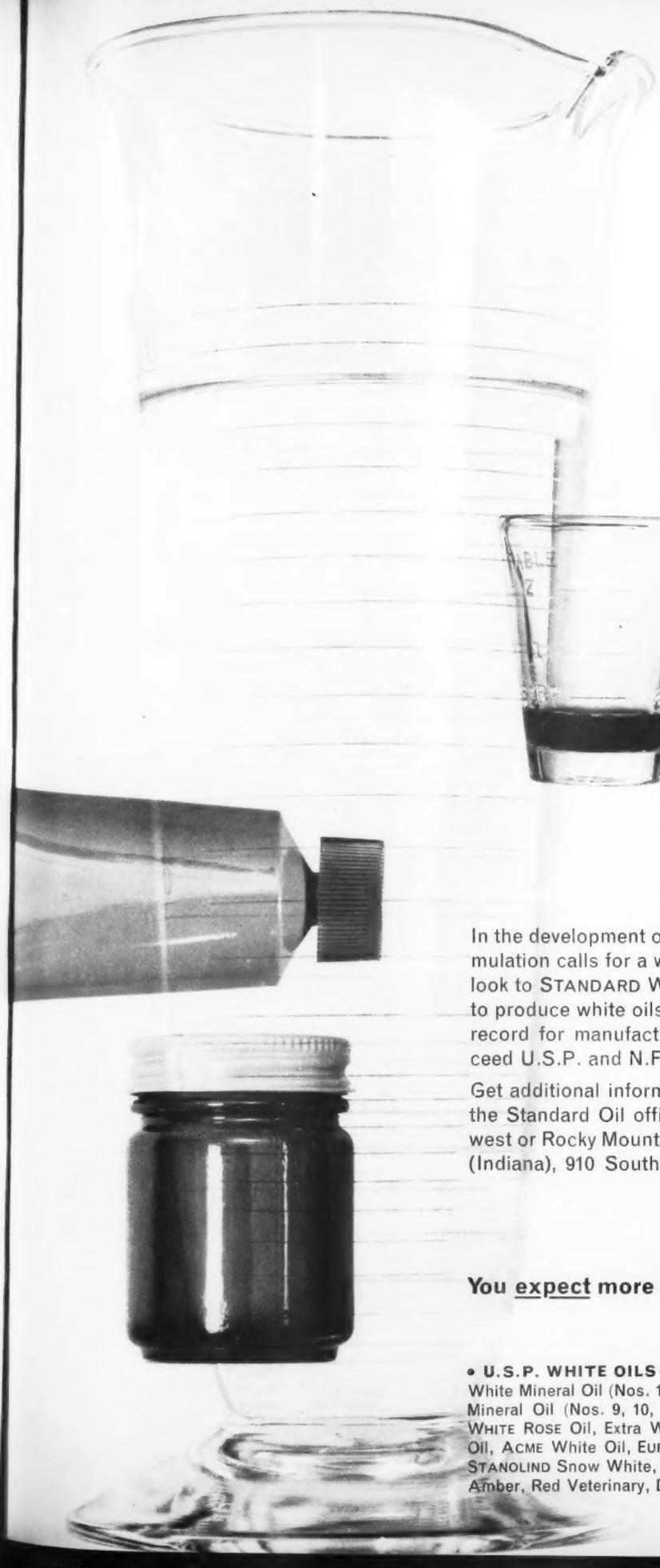

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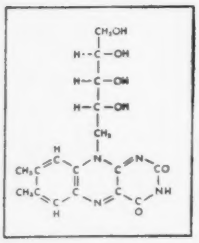
The Vital Story

A Quick History. Independent investigators, working separately to unlock several of nature's doors, sometimes open up unsuspected relationships. This happened with vitamin B_2.

Investigations. About 25 years ago, several groups, notably Warburg's, were investigating a "yellow enzyme" obtained from yeast. Almost simultaneously other investigators were studying a food factor that aided growth of laboratory animals.

What they found. Proceeding with chemical analysis of this growth factor, the team of Kuhn, György, and Wagner-Jauregg noted a relationship between the growth-producing agent and the "yellow enzyme." Their findings, and those of other researchers along similar lines, were published in 1933. Eventually, riboflavin and an essential part of the yellow enzyme were found to be identical and the unity of an essential nutrient and cellular metabolism was established.



Isolation of pure riboflavin was achieved by Kuhn and his co-workers, and by Ellinger and Koschara, in 1933.

Nomenclature. Known in the United States as riboflavin, this vitamin has also been called lactoflavin, ovoflavin, hepatoflavin, and vitamin G.

SYNTHESIS

By 1935, two eminent chemists, working separately, had synthesized riboflavin, practically in a dead heat. Prof. Paul Karrer of the University of Zurich, a collaborator of the Hoffmann-La Roche Laboratories, produced the first successful synthesis. Five weeks later Richard Kuhn of Germany announced his synthesis of the vitamin. Prof. Karrer subsequently shared the Nobel Prize in Chemistry for his work in vitamins and carotenoids.

The Karrer synthesis forms the basis for chemical processes in widespread use today by Hoffmann-La Roche and other leading manufacturers throughout the world. Riboflavin is also manufactured today by fermentation methods.

CHEMICAL AND PHYSICAL PROPERTIES

Riboflavin is yellow, slightly water-soluble with a greenish fluorescence and a bitter taste. Its empirical formula is $C_{17}H_{20}N_4O_6$. Vitamin B_2 produced by the Roche process is identical in every way with that occurring in nature.

How does vitamin B_2 work? Riboflavin is a vital part of nature's chain of reactions for utilization of carbohydrate energy. It has been found to be a constituent of many enzyme systems and is thus intimately connected with life processes. It is probably required by the metabolic processes of every animal and bird as well as by many fishes, insects and lower forms of life. (In certain animals, however, the requirement may be synthesized by bacteria within the intestine.)

In the cells riboflavin goes to work attached to a phosphate group. This substance, known as riboflavin-5′-phosphate or flavin mononucleotide, may in turn be attached to still another essential substance, adenylic acid, forming flavin adenine dinucleotide. Either nucleotide then is attached to protein, thereby forming an enzyme, and takes its part in oxidation-reduction reactions.

Requirements in Human Nutrition. As we have seen, vitamin B_2 is essential to life. We have no special storage organs in our bodies for this vitamin, although a certain level is maintained in various tissues, with relatively large amounts found in the liver and kidneys.

MEASURING METHODS

In the beginning, riboflavin activity was described in "Bourquin-Sherman units" and requirements were thought to be very small. Subsequent research showed otherwise. Milligrams of weight became the unit and the Food & Drug Administration of the U. S. Dept. of Health, Education & Welfare established (July 1, 1958) a minimum daily requirement of 1.2 mg. of riboflavin for all persons 12 or more years old. For infants it is 0.6 mg. These requirements are designed to prevent the occurrence of symptoms of riboflavin deficiency disease. The minimum daily requirement for this vitamin for children from 1 to 12 years is 0.9 milligram.

Recommended allowances. The Food & Nutrition Board of the National Academy of Sciences—National Research Council, in its 1958 publication #589, recommends the following daily dietary allowances of riboflavin, expressed as milligrams. These are designed to maintain good nutrition of healthy persons in the U.S.A.

Men	1.8
Women	1.5
Women (pregnant; second half)	2.0
Women (lactating)	2.5
Infants (2 to 6 months)	0.5
Infants (7 to 12 months)	0.8
Children (1 to 3 years)	1.0
Children (4 to 6 years)	1.3
Children (7 to 9 years)	1.5
Children (10 to 12 years)	1.8

	Boys	Girls
Adolescents (13 to 15 years)	2.1	2.0
Adolescents (16 to 19 years)	2.5	1.9

# of VITAMIN B_2

(Riboflavin)

by Science Writer

Deficiencies of vitamin B_2 appear in several ways in human beings. The eyes, the skin, the nerves, and the blood show the effects of too little riboflavin. Laboratory animals have demonstrated that a riboflavin-deficient diet can cause death of adults and can slow or stop growth in the young. Female animals, deprived of riboflavin in the diet, may produce offspring with congenital malformations.

Medical uses. To overcome and control deficiencies in human beings, physicians have pure riboflavin available for administration by injection or orally, by itself or with other "B" vitamins or multi-vitamin-mineral combinations.

How do we get our daily riboflavin? Vitamin B_2 has wide distribution throughout the entire animal and vegetable kingdoms. Good sources are milk and its products, eggs, meats, legumes, green leaves and buds. Whole-grain cereals have significant but not large amounts of riboflavin.

ADDITION TO FOODS

Cereal foods play a large part in our diet. To produce the white flour almost all of us want, millers are obliged to remove parts of the wheat that contain much of the grain's riboflavin and other nutrients. In addition, cereal grains are not rich sources of riboflavin. Millers meet this problem by *enriching* the grain foods for which federal standards exist with vitamins B_1, B_2, niacin and the mineral iron. In the case of vitamin B_2, however, they do more than *restore* the processed food to its natural riboflavin level; they *fortify* the food with enough of this essential vitamin to make it nutritionally more valuable than it was in nature.

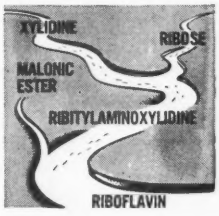
Acting to protect the good health of millions of Americans, bakers and millers adopted *enrichment* of white bread and white flour in 1941. Since that time, other foods, such as macaroni products, corn meal and grits, farina, pastina and breakfast cereals have had their food value increased by enrichment with pure riboflavin and other vitamins and minerals.

When enriching, fortifying or restoring, food manufacturers add the necessary quantity of riboflavin (and other vitamins and minerals) to the food during processing, so that the finished product meets federal, state, and territorial requirements or contributes to the consumer an amount of the vitamin that dietary experts believe significantly useful.

PRODUCTION

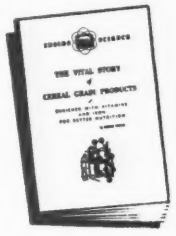
Prof. Karrer's synthesis of riboflavin was a laboratory success. Adapting the process to commercial production, however, demanded original thinking by chemists at Hoffmann-La Roche. The production of riboflavin by chemical synthesis requires the production of ribose, a rare sugar, at an early stage in the process. This special sugar must be made inexpensively if the synthesis is to be practical. Sugar chemistry is a difficult matter. In a brilliant piece of work, the Roche chemical experts developed a method to produce ribose on a commercial scale by an electrolytic process, thus overcoming a most troublesome problem. Subsequently, Roche chemists developed the first practical synthesis for riboflavin-5′-phosphate, identical with natural flavin mononucleotide.

Picture three streams joining to form a river and you have a simplified idea of the Roche process for synthesizing vitamin B_2. O-xylene and glucose are processed separately to form xylidine and ribose respectively. These are joined to form ribitylxylidine, which is then converted to ribitylaminoxylidine. Starting separately with malonic ester, which is processed through intermediate stages to alloxan, the third "stream" is then joined with ribitylaminoxylidine to form riboflavin. Purification occurs at each step of the synthesis. Riboflavin Roche* equals or exceeds U. S. P. standards.



By the tons. So efficient is the Roche process that pure riboflavin is produced *by the tons* for use in pharmaceutical products and processed foods. An interesting development by Roche is the production of riboflavin in different forms related to the method of end use. Roche*Regular riboflavin U. S. P. is especially useful in dry enrichment premixes, powdered dietary supplements, pharmaceutical tablets and soft gelatin capsules. Roche*Solutions type is preferred for the manufacture of solutions having low concentration. Roche* Riboflavin-5′-Phosphate Sodium is a highly and rapidly soluble riboflavin compound favored for all pharmaceutical liquid products and some tablets, lozenges, and capsules. It has a more pleasant taste than the bitter U. S. P. riboflavin.

This article is published in the interests of pharmaceutical manufacturers, and of food processors who make their good foods better using pure riboflavin Roche. *Reprints of this and others in the series will be supplied on request without charge. Also available without cost is a brochure describing the enrichment or fortification of cereal grain products with essential vitamins and minerals. These articles and the brochure have been found most helpful as sources of accurate information in brief form. Teachers especially find them useful in education. Regardless of your occupation, feel free to write for them. Vitamin Division, Hoffmann-La Roche Inc., Nutley 10, New Jersey. In Canada: Hoffmann-La Roche Ltd., 1956 Bourdon St., St. Laurent, P. Q



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Many chemical species have given birth to the products used in today's complex chemical world. Two families of increasing importance to the pharmaceutical industry are the organic bromides and the amino acids. Following is a brief discussion of these families which includes important news about fourteen amino acids, brominated products and ion exchange resins.

You may wish to check certain items in this advertisement and forward to those concerned in your company.

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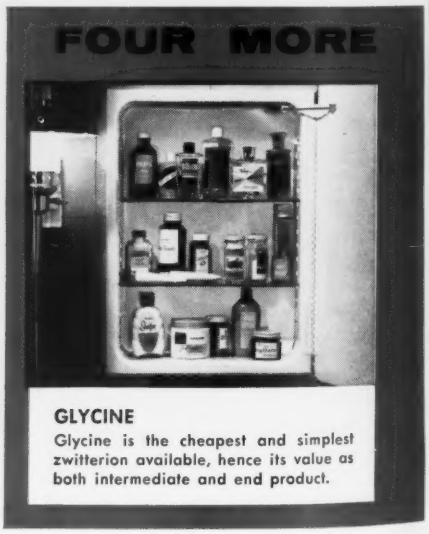
Australians are the tallest people in the world, Americans just a shade behind. The people of India and China are among the shortest—and their life expectancy is considerably less than half that of Australians and Americans. Why? It is no coincidence that the Asian diet contains less protein by far.

Dow amino acids now available for research may show the way to a solution of some of the world's most serious nutrition problems.

Malnutrition caused by protein deficiency may someday be defeated by research on the essential amino acids now being carried on in pharmaceutical laboratories around the world.

For years, the chief obstacle to speedier progress in amino acid research was the prohibitive cost of the substances themselves. Now, Dow—which has long supplied glycine, methionine and acetylmethionine in commercial quantities—is prepared to deliver other amino acids in quantities and prices practical for research.

Dow can now synthesize seven of the eight amino acids considered essential for humans and seven nonessential



GLYCINE
Glycine is the cheapest and simplest zwitterion available, hence its value as both intermediate and end product.

amino acids. Threonine, the eighth essential, is the subject of continuing laboratory study and may soon be added to the list.

The potential of the amino acids in animal nutrition is already well recognized. The various substances which, by reason of availability and price, are commonly used as farm animal feeds, are usually deficient in one or more of these growth-promoting ingredients. Addition of the commercially available amino acids—such as methionine and glycine—has been a major factor in bringing feeds up to higher nutritional levels than was ever before possible.

The ultimate potential of the amino acids, however, has not even been approached. The outlook is limitless. Lysine, for example, is thought by many to have marvelous possibilities as a supplement to the human diet. It has reportedly brought substantial help to infants whose growth rates were below average and appetites poor. Tryptophan, too, merits extensive and serious study, as do *all* the essentials.

Dow built its amino acid pilot plant not to capitalize on an immediate demand, but to stimulate and promote research on these fascinating chemicals. Dow is anxious to work with pharmaceutical firms with a serious interest in extending the effective use of the amino acids. When new and better uses are found, Dow will be ready with adequate production at the lowest feasible cost.

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If news of these products has made you want to know more, let us know. We'll be happy to answer your questions about these or any other Dow products for the pharmaceutical industry. Write THE DOW CHEMICAL COMPANY, Midland, Michigan, Chemicals Merchandising Department 961AW6.

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Brominated products: ideal building blocks for pharmaceutical industry.

be used in the preparation of a Grignard reagent and in Ullman and Friedel-Crafts reactions—as well as in reactions involving the removal of bromine and its replacement with amines, hydroxyls and nitriles. It is an extremely useful and versatile product.

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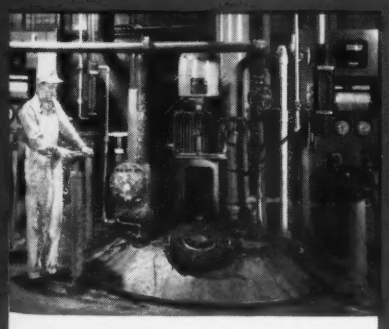

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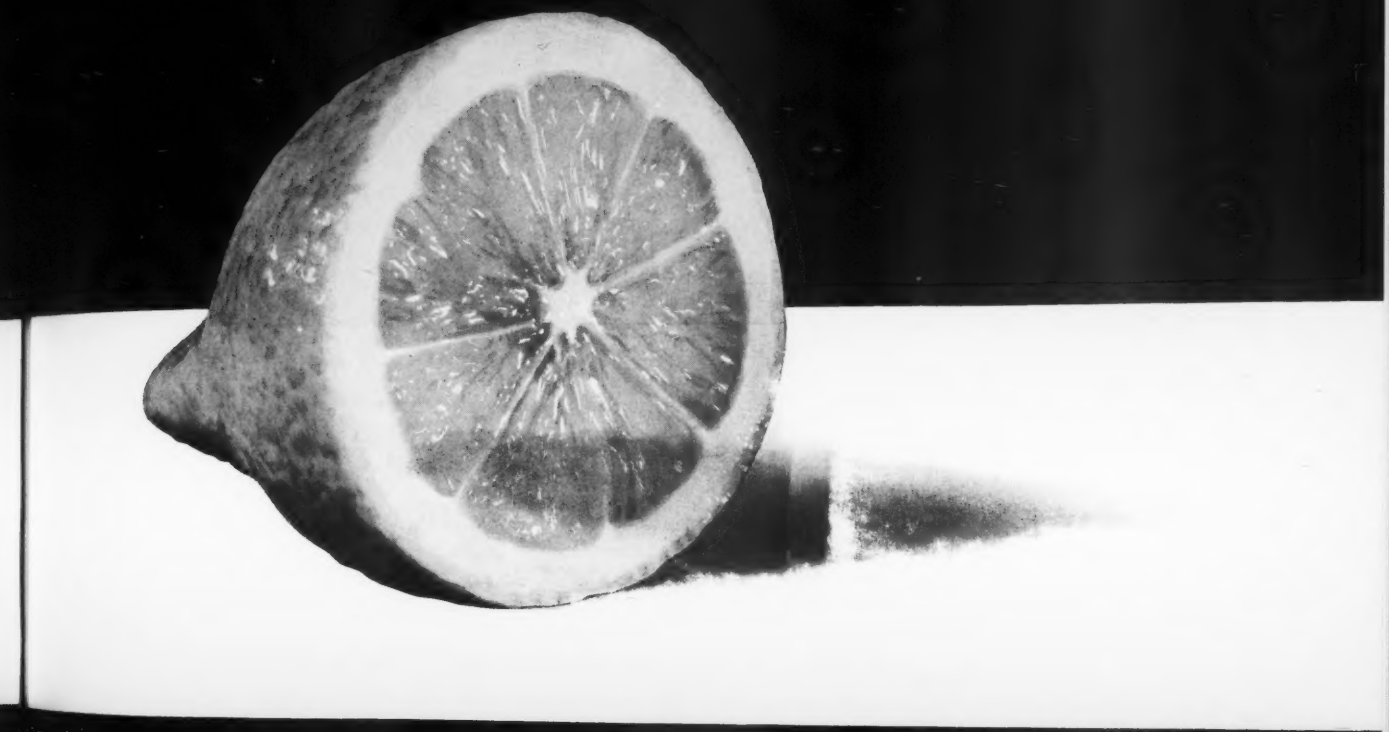

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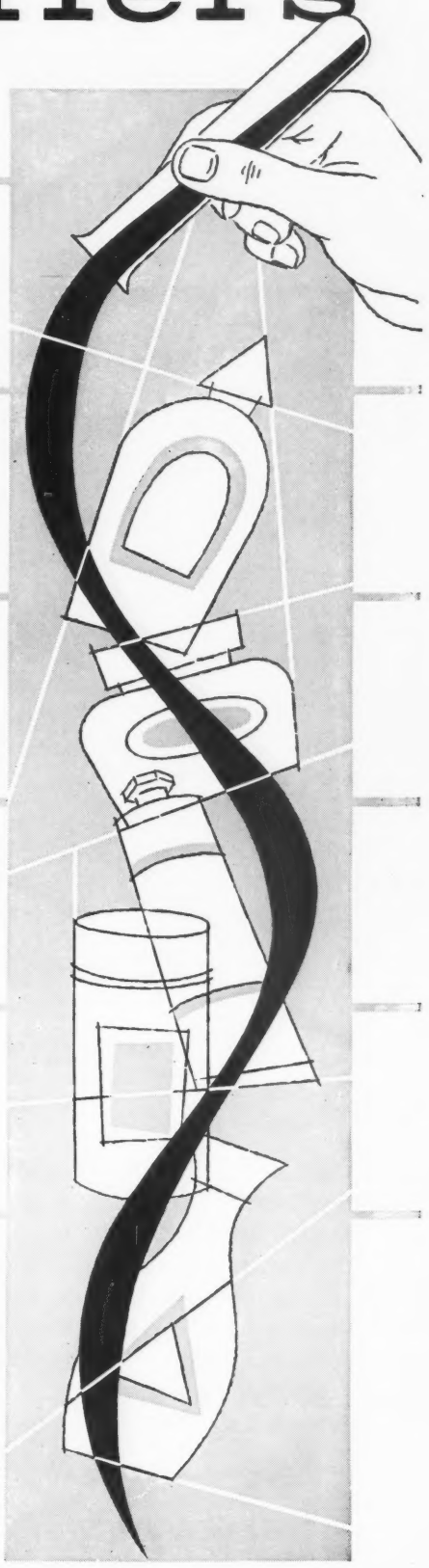

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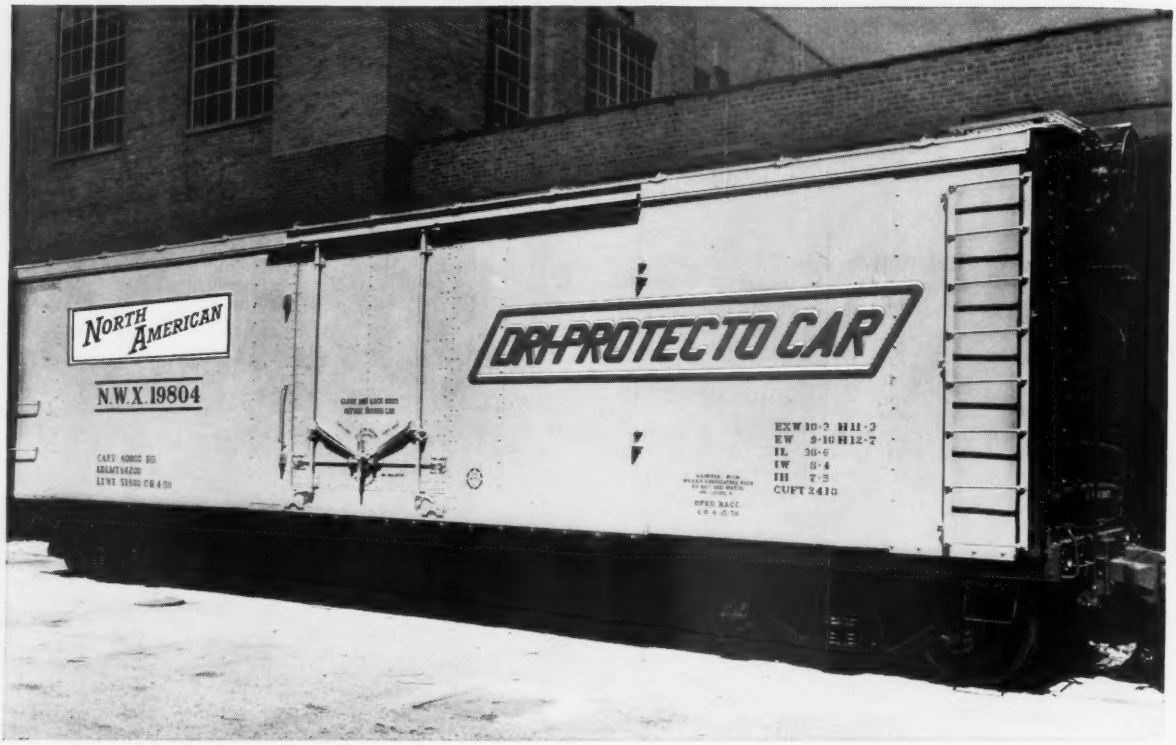

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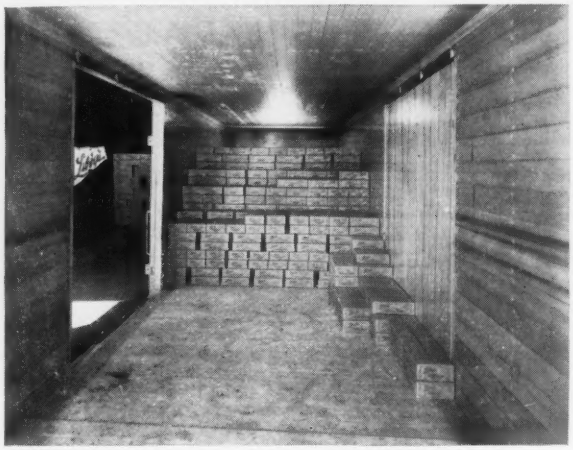

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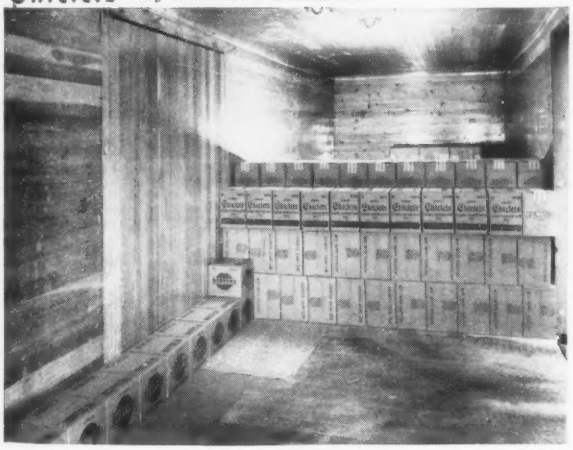

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Telephone Financial 6-0400

North American Car Corporation
Sales Dept. Attn: Mr. H. R. Platt
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Combining the ingredients that produce the best sheen on sterling silver is often a problem for the polish maker. In this case, the separation problem couldn't be solved satisfactorily by homogenization or colloid milling — and a number of products tested could not prevent the separation without making the emulsion too thick for easy use.

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Carbopol may be the answer to your need for an improved product or application. Information and samples are available. Write Dept. DB-3, B. F. Goodrich Chemical Company, 3135 Euclid Avenue, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

Reed & Barton Silver Polish containing Carbopol 934 to eliminate separation and produce ideal viscosity is made by Henry Thayer Company, Cambridge, Mass. B. F. Goodrich Chemical Company supplies the Carbopol 934.

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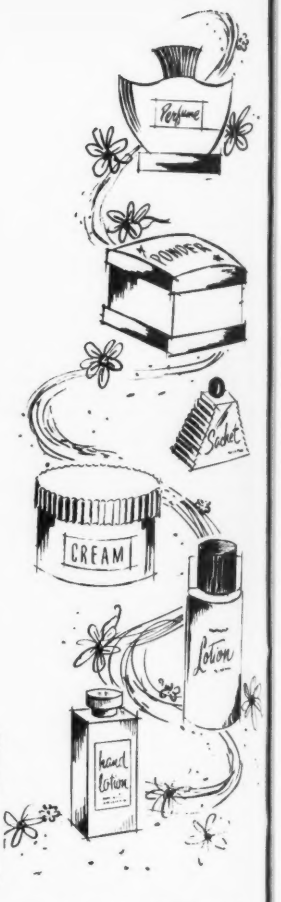

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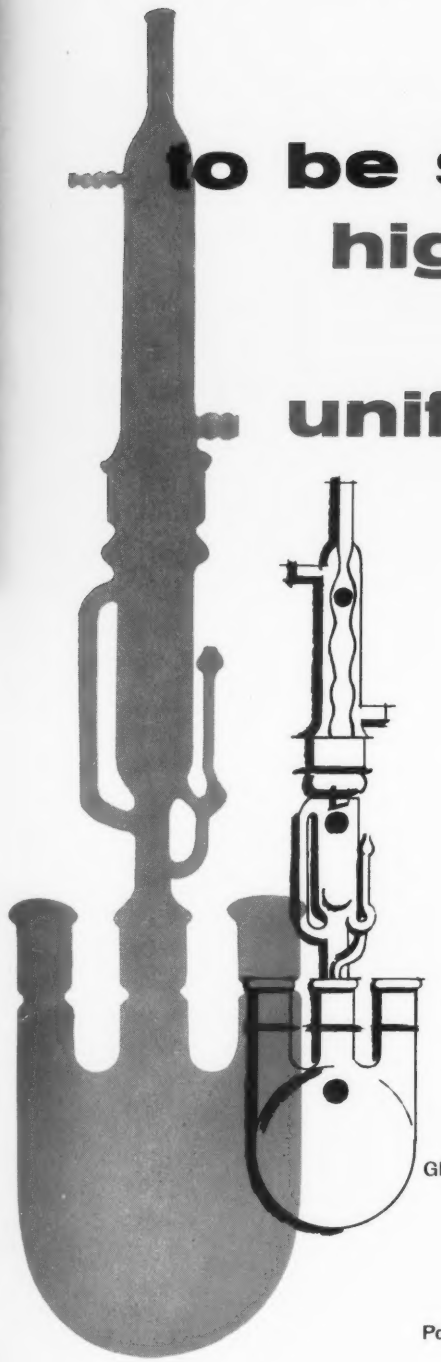

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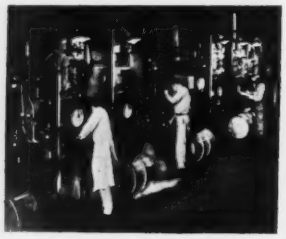
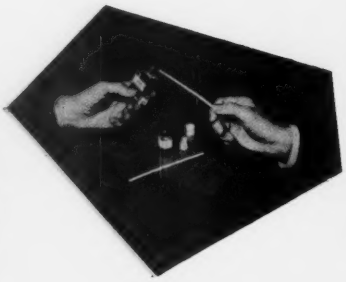


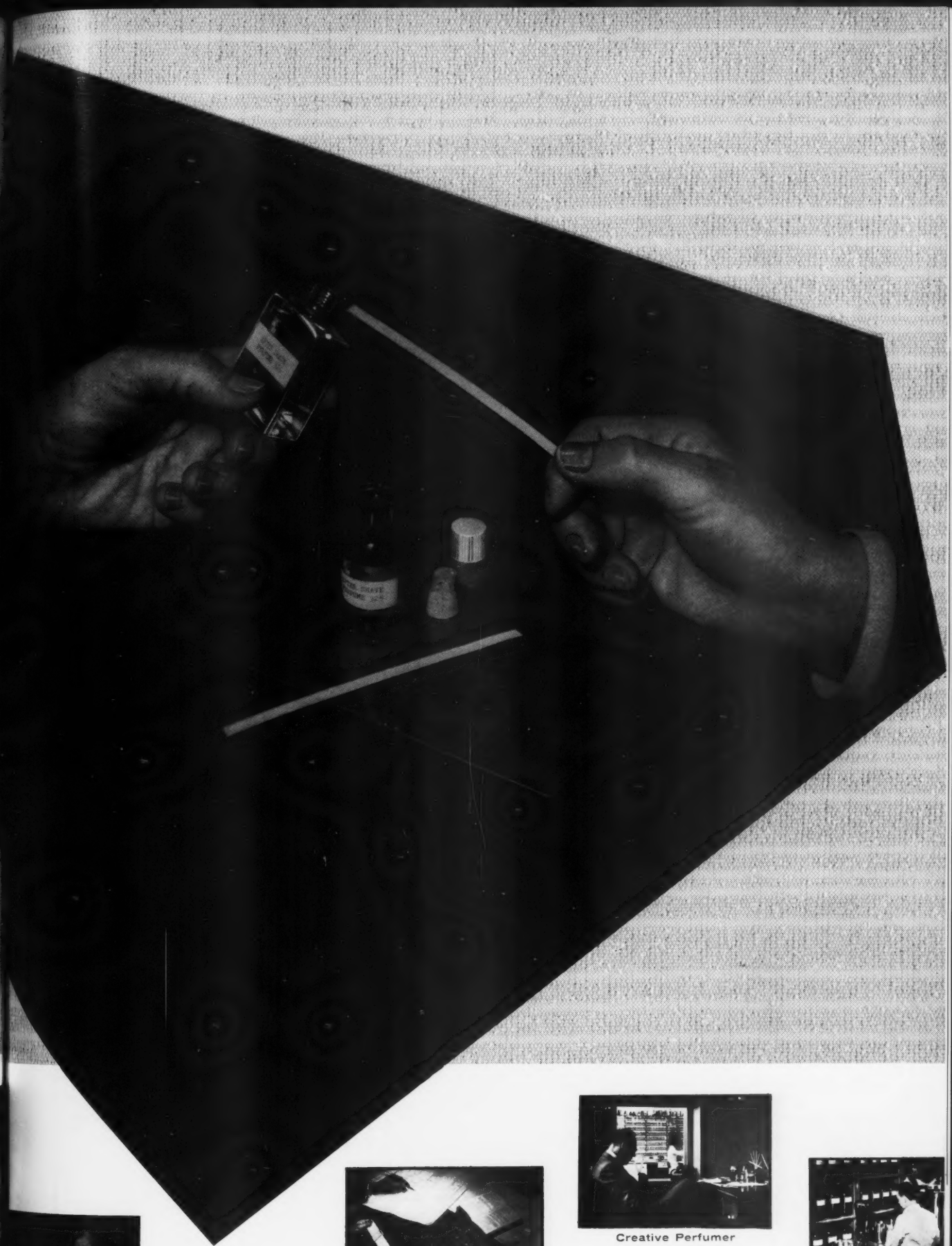
Chemical Manufacturing

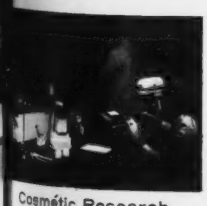
Perfume
Evaluation Board



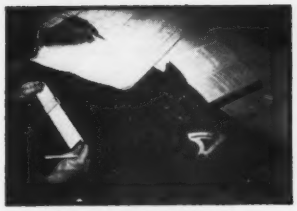
Sales

Aromatic
Chemical Rese





Cosmetic Research



Chemical Engineering

Creative Perfumer

Perfume
Oil Production

The regional managers you see here are relaying customer requests for technical assistance to Brooklyn headquarters. The results of one such call are related below:

TECHNICAL SERVICE "ON THE LINE"

Here's how one drug manufacturer took advantage of Pfizer's experience in antibiotics and steroids:

"How can I get a special extraction technique for neomycin in the presence of my ingredient *X?*" a customer of Pfizer's Chemical Division recently asked.

"I can't assay my product for neomycin until I get this solved. It's holding up all my stability tests, and I'll never be able to control production without a reliable assay," was his plea.

The customer had decided several weeks before to go into the growing topical products market with an anti-inflammatory, anti-infective agent containing neomycin, polymyxin and hydrocortisone. Having had little experience with non-systemic antibiotics and steroids, he called Pfizer for help.

At that time, the Chemical Division called in the Technical Service Department who, in short order, supplied the customer information on:

1. Suggested antibiotic combinations for balanced therapy
2. Rationale
3. Use levels 4. Stability
5. Compatible ointment bases

It was when the drug manufacturer got into making up his experimental samples that he ran into the neomycin extraction problem in the presence of ingredient *X* (his own specialty).

The Technical Service Department worked out the extraction technique. But, they didn't stop there. They went on to run both accelerated and room temperature stability studies on the experimental formulation and check assays on the first production batch for the customer. Now, he has a successful new topical product. And we've another satisfied customer.

As you probably guessed, we've been trying to show you how you, too, can take profitable advantage of Pfizer's experience in antibiotics, steroids, and vitamins. Just call your local Pfizer representative or write to Chas. Pfizer & Co., Inc., Department WP, 630 Flushing Avenue, Brooklyn 6, N. Y.

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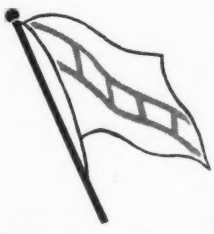

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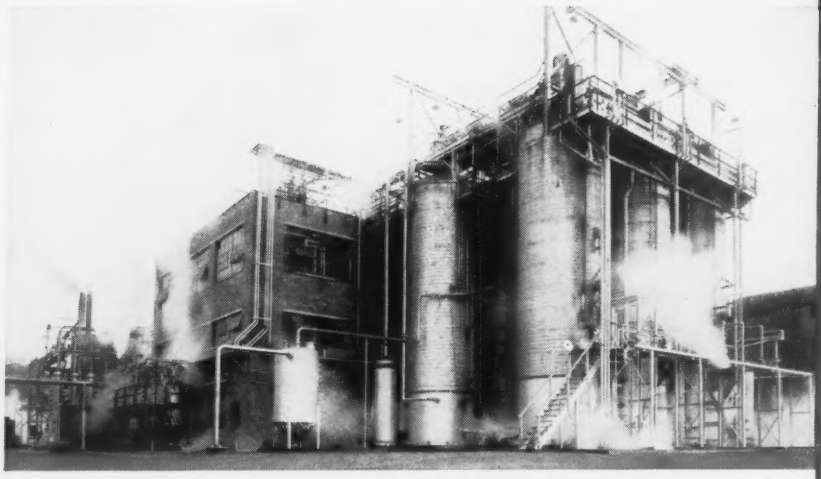
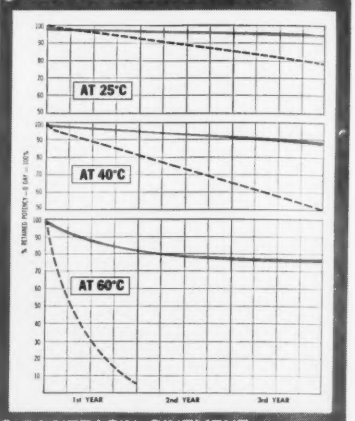
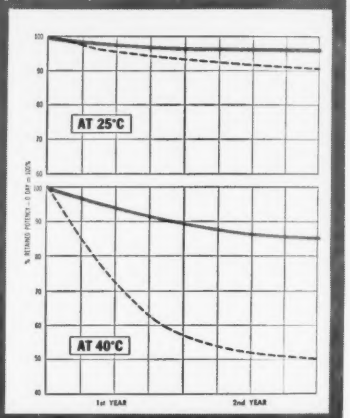


Typical Curves Showing Thermal Stability of
ZINC BACITRACIN
(red solid line)
VS.
REGULAR BACITRACIN
(black broken line)

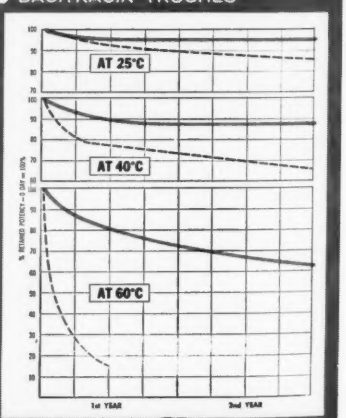
● NON-FORMULATED POWDER



● BACITRACIN OINTMENT



● BACITRACIN TROCHES



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when formulating preparations containing bacitracin.

The use of bacitracin in pharmaceutical compounds is growing rapidly because this antibiotic has proved non-allergenic, non-absorptive, and non-irritating. Commercial Solvents Corporation manufactures and sells both regular and zinc bacitracin, but, for topical applications zinc bacitracin is the better buy.

STABLE: Zinc bacitracin offers superior activity stability at room and elevated temperatures. Stability is maintained even at the high temperatures required in the manufacture of pharmaceuticals needing heated ointment or suppository bases, oven-drying of granulations, molten sugars for candy troches.

ECONOMICAL: Zinc bacitracin stored for two years at 40° still passed the FDA minimum potency requirements. Storage and thermal stability eliminate the need for utilizing a high percentage of excess antibiotic, and reduce product cost.

SYNERGISTIC: Zinc bacitracin is currently being combined with other antibiotics such as neomycin. Tablet and ointment formulations of zinc bacitracin and neomycin are stable, economical and provide broad-spectrum coverage.

LESS BITTER: Zinc bacitracin is inherently less bitter tasting than bacitracin. In addition, the taste of zinc bacitracin is much more easily masked than that of bacitracin.

Commercial Solvents Corporation manufactured in bulk the first bacitracin and zinc bacitracin in the world. Zinc bacitracin is approved by the FDA for use in ointments, tablets, implantation pellets, suppositories, and troches, either alone or combined with other microbiotics or therapeutic agents. A special grinding process yields zinc bacitracin in any particle sizes required, as fine as 5 to 10 microns. Minimum guaranteed potency: 50,000 units/gram. Immediate delivery.

CSC

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thurification

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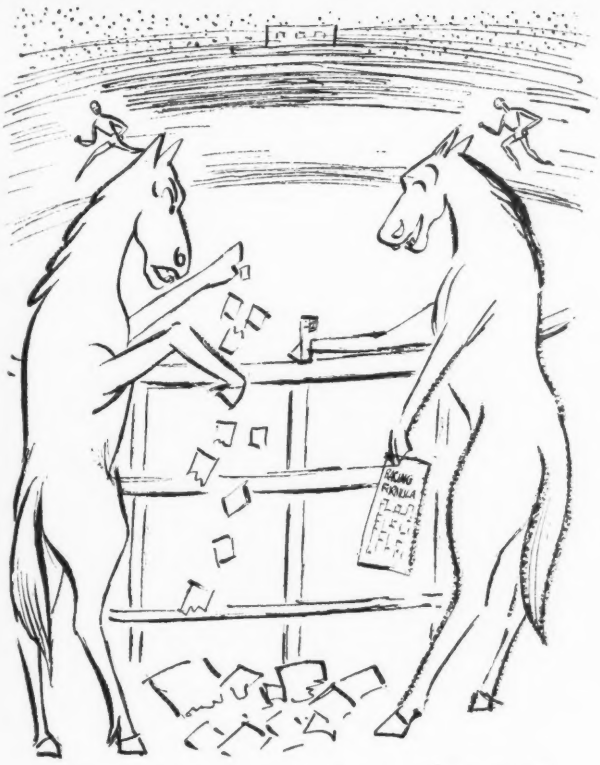

"They otta examine his saliva for pep pills!"

Keeping Posted

Revlon Sells Schering Stock

Revlon has sold 128,739 shares of the common stock of Schering Corporation and now holds only 100,000 shares. At the time when Revlon purchased about nine per cent of Schering stock in 1957, it was reported that Revlon was seeking a controlling interest in Schering, although Revlon described the purchase as "an investment." In regard to the recent sale of Schering stock, Revlon says "We decided the price looked good."

Soap and Synthetic Detergent Sales

Sales of soaps and synthetic detergents in the first quarter of this year totaled 975,294,000 pounds, valued at $249,417,000 for 62 members of the American Soap & Glycerine Producers, Inc., who constitute a substantial part of the industry. Tonnage was up one per cent over the first quarter of 1958, but was down two per cent from the 1958 fourth quarter. Dollar sales were up about two per cent over the 1958 first and fourth quarters.

Synthetic detergent sales totaled 732,896,000 pounds, valued at $179,144,000, up five per cent in pounds and dollars from the first quarter of 1958. Solid synthetic detergents totalled 618,400,000 pounds, valued at $135,389,000, a three per cent increase in pounds, and a one per cent increase in dollars over the first 1958 quarter. Liquid detergent sales were 114,496,000 pounds, valued at $43,755,000. Tonnage increased 14 per cent, and value rose 18 per cent over the first 1958 quarter.

Soap sales, totaling 242,398,000 pounds at $70,273,000, slipped ten per cent in pounds and two per cent in dollars from the first 1958 quarter.

Mead Johnson Quits Parenterals

Mead Johnson & Company has sold the product line and business of its Parenteral Division to the American Hospital Supply Corporation. The Parenteral Division was not a profitable one for Mead Johnson, according to company president D. Mead Johnson, who further stated that the sale will enhance the current profitability of the company and will permit further concentration of the company's efforts in the fields of nutritional and pharmaceutical specialty products, which have been the focal point of the expanded Mead Johnson research and development program in recent years.

The sale will not seriously affect Mead Johnson's 1959 sales performance, according to Mr. Johnson, and he indicated that it will not interfere with the company's announced intention of achieving a sales goal of $100 million by 1962.

Schering Facts

Schering Corporation has been "successful in building sales in significant areas other than corticosteroids, such as antihistamines, central nervous system, nutritionals, biologicals, and laxatives," Mortimer J. Fox Jr., Schering vice-president and treasurer, told the Washington Society of Investment Analysts last month. Schering currently enjoys an estimated 20 per cent ($19 million) of the $95 million a year corticosteroid market, according to Mr. Fox, indicating that by far the largest part of Schering's $75,180,000 sales in 1958 came from nonsteroid products.

Speaking of the industry as a whole, in which annual sales have increased from $200 million in the early thirties to more than $2 billion currently, Mr. Fox said: "There seems to be very good likelihood that the rate of growth will continue at not less than 10 per cent per year. One competent study places the sales for just the domestic ethical portion of the industry at over $5 billion in 1975. This would be a compounded rate of growth of about 6 per cent a year. I think this figure may prove to be low."

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because it is bigger and brighter than the others and floats on the air like a happy red smile. Because when all the rest have broken away or popped in the wink of an eye, this one remained her friend the whole sunny day. D&O is much more subtle than a red balloon you can be sure! Accomplished and creative chemists are ready to meet your most abstract or specific perfuming need, drawing on the finest raw materials, the most modern equipment and more than 160 years of experience. Consistency, quality, technical assistance all combine with these to make your perfume composition, like the red balloon, the one that stands apart.

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Sales Offices in Principal Cities

Stepan Buys Maywod Control

Maywood Chemical Works, Maywood, N. J., control is being taken over by the Stepan Chemical Company, Chicago, which company is taking over 80 per cent of the voting stock of Maywood, and is making an offer to purchase all remaining shares. The total price to be paid by Stepan for Maywood is approximately $5 million.

Maywood Chemical Works, founded in 1888, is a pioneer producer of lithium, thorium and rare earth metals, and owns mines in South Dakota. It is a principal manufacturer of shampoo detergents, aromatic chemicals and flavoring compounds. It has long been important for importing coca leaves, and extracting and destroying the cocaine in these leaves under the supervision of the U. S. Bureau of Narcotics, so that the leaves could be used for flavoring purposes in Coca-Cola. Maywood's net worth is given as approximately $4.5 million. Earnings have averaged $350,000 a year after taxes for the past five years, during which period sales have averaged $4 million a year.

Strong, Cobb and Arner Merger

Strong, Cobb and Company and The Arner Company are being merged into a new corporation known as Strong Cobb Arner Inc., a New York corporation with its official headquarters at 165 Swan Street, Buffalo, N. Y.

Strong Cobb common stock is being exchanged share for share in the new corporation, and Strong Cobb preferred stock, par value $100, is being exchanged for four shares of five per cent preferred stock, $25 par value, of the new corporation. Each share of Arner common stock is being exchanged for four shares of common stock in the new corporation. Arner has no outstanding preferred stock. The exchanges of common stocks of the merging companies will total 1,516,326 shares of common stock in the new corporation, of which about 58.9 per cent will have been exchanged for Arner stock, and about 41.1 per cent for Strong Cobb stock. The total capitalization of the new corporation, in addition to the 1,516,326 shares of common stock, consists of $866,677.5 per cent promissory notes due in 1972, taken over from Arner, and 20,000 shares of 5 per cent preferred stock, taken over from Strong Cobb. The new corporation has an authorized 3,000,000 shares of $1 par value common stock and 200,000 shares of 5 per cent, $25 par value preferred stock.

Arner common stock was closely held by only 20 stockholders. Mrs. Francis Chorin, wife of the board chairman, and members of her family owned directly and indirectly about 32 per cent of Arner common stock, and three other stockholders each owned over 10 per cent.

Both Strong Cobb and Arner have been manufacturers and packagers of drug products for other companies. Approximately 50 per cent of Strong Cobb's sales for 1958 were of drug products sold only on prescription. The balance consisted primarily of proprietary products advertised to the public and sold over the counter. To a limited extent, the company made foods, cosmetics, veterinary and chemical products.

Strong Cobb's principal manufacturing facilities are in Cleveland, Ohio, consisting of four buildings totaling 198,000 square feet. Of this, about 100,000 square feet are in buildings owned by the company, and the balance in leased buildings, the leases expiring in 1962. The company also has a modern building in Murray Hill, N. J. These facilities, of about 41,000 square feet, are under lease until 1975. Strong Cobb has about 300 employees.

Arner produces both proprietary and ethical drugs and small amounts of cosmetics and lotions. Coated drug tablets represent about 50 per cent of sales, and the company makes uncoated tablets, capsules, pills, powders, liquids and ointments.

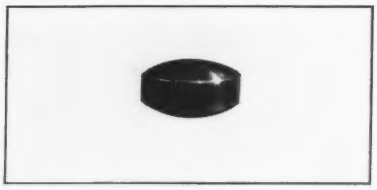
Arner is a party to a long-term license agreement with a company wholly owned by Mr. Sanders, a vice president and director, relating to certain manufacturing processes (not heretofore used by Strong Cobb), under which Arner paid royalties of $62,240 during the fiscal year ending January 31, 1959. The agreement provides that Arner will exert its best efforts to extend rapidly customer acceptance of the process to which the agreement relates.

Arner leases directly or indirectly from directors of Arner, members of their families and/or companies which they control, approximately 209,000 square feet of space in Buffalo, N. Y., mostly devoted to manufacturing.

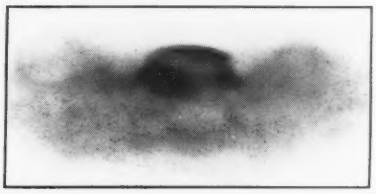
Initial directors of the new corporation, five from Strong Cobb—Frederic H. Brandi, Harold F. Cummings, John N. Eustis, John M. Fisher and Wesley A. Stanger, Jr.; and five from Arner—L. Peter Candler, Howard H. Chesny, Francis Chorin, Niels C. Klendshoj and Nicholas M. Salgo. Chairman of the board of the new company is Dr. Klendshoj, former president of Arner; the president is Mr. Eustis, former president of Strong Cobb.

Sales of Strong Cobb for the past four years were: 1958, $6,707,492; 1957, $7,946,592; 1956, $7,411,224; 1955, $6,591,849. Sales for Arner for the last four fiscal years, ending January 31, were: 1959, $7,837,565; 1958, $9,342,214; 1957, $10,684,299; 1956, $6,945,135.

Net income for Strong Cobb showed a loss of $131,090 for 1958 after a tax refund of $116,000; profit of $316,185 for 1957, $370,224 for 1956; and $93,103 for 1955. Net income for Arner was $153,134 for 1959, $294,318 for 1958, $955,434 for 1957, and $719, 374 for 1956. No Federal income taxes were paid by Arner during these four years because unapplied consolidated losses prior to February 15, 1955 of Edward and John Burke (into which Arner was merged) were sufficient in amount to absorb income. The combined companies would have shown the fol-



It's an enteric coating



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lowing sales and income figures for the four years: 1958, sales $14,545,057, loss $32,021; 1957, sales $17,288,806, income $427,432; 1956, sales $18,095,523, income $830,759; 1955, sales $13,536,984, income $423,272.

Service Wholesalers in 1958

That the wholesale drug business felt last year's recession is indicated by the 1958 Operating Survey of over 240 full-line service drug wholesalers, made by the National Wholesale Druggists Association. A small nationwide sales increase of 0.5 per cent was noted in comparison with 1957, but this was the smallest increase in postwar years. Gross profit in 1958 declined slightly and operating expenses were up 3.5 per cent. Returns and allowances continued to be bothersome, reaching a record high of 3.43 per cent of net sales, or an increase of 6.5 per cent over 1957. Net profits before taxes declined sharply from the postwar peak of 1957 and settled at a level of 4 per cent. Net profits after taxes suffered a corresponding decline with the nationwide average of 1.98 per cent.

A few comparative results are listed:

	1958	1957
Net sales	100.00%	100.00%
Cost of goods sold	82.58	82.47
Gross profit	17.42	17.53
Operating Expenses	13.42	12.97
Administrative	5.30	5.08
Occupancy	.67	.59
Selling	3.45	3.41
Warehouse	2.58	2.55
Delivery	1.39	1.33
Net profit before taxes	4.00	4.55
Federal income taxes	2.02	2.29
Net profit after taxes	1.98	2.26

Smith, Kline & French Facts

Smith, Kline & French Laboratories split its stock, three for one, and now has outstanding 14,531,310 shares of no par value, replacing 4,843,770 shares of 33 1/3 cents par value. The quarterly dividend was increased so that it will represent 25 cents per share on the new stock. In 1958, dividends totaled $2.60 per share.

SKF will add two wings to the present Biological Sciences Building on the 26-acre tract at Upper Merion—a suburb of Philadelphia—at a cost of $1 million. One wing will house the new vaccine-virology research and development facilities and the other will be an expansion of the present toxicology-pathology laboratories. SKF president Walter A Munns emphasizes that the expansion in the fields of vaccines and virology were undertaken on a "long-range basis with the objective of developing vaccines and anti-bacterial agents that will not duplicate the kind of preparations that are now being marketed." The toxicology-pathology wing, he said, will enable SKF to handle more effectively and economically the preliminary safety tests of new compounds.

The new plant near London, England, one wing of which will house the recently established Smith, Kline & French Research Institute which will directly supplement the parent company's research and development activities in Philadelphia, will be ready for occupancy in late August. Mr. Munns said the Institute "has now gathered a nucleus of key scientific personnel and should be in full operation by early 1960."

Sales in the first three months of 1959 were $32,443,000, against $30,668,000 in the first quarter of 1958. Earnings for the 1959 quarter were $6,088,000, against $4,774,000 for the 1958 quarter, or $1.26, compared with 99 cents. Mr. Munns points out that this year's first quarter "saw a number of factors at play which may prove unique to this one quarter," adding, "None the less, we look forward to another satisfactory year." The 1959 research budget is $12.2 million, compared to $10.8 million last year, he said.

Miles Citric Acid

Miles Laboratories comment on their citric acid operations in their annual report: "Last Fall work was begun on a $3,600,000 expansion of Miles citric acid manufacturing facilities in Elkhart. When completed late in 1959, the plant's capacity for producing citric acid will be more than twice what it is today; and Miles will become an important producer of the world's supply of citric acid.

"Miles' process for the production of citric acid is the only one of its type known to be operating in the world and achieves certain operating economies. This process was developed by scientists in the Miles-Ames Research Laboratory following World War II. The present Citric Plant began operations in January, 1952. . . . Newly discovered uses for citric acid plus the increasing demands of current users combine to make a healthy and expanding market for citric acid."

Miles describes the process as "a submerged fermentation process."

The company plans to consolidate the Sumner Chemical Company, Takamine Laboratory, and the citric acid operations under one executive head.

New Detroit FDA District

For the first time in the history of food and drug control, which started with the Federal Food and Drugs Act of 1906, a building has been built, designed and equipped solely for the purpose of protecting the public in the matter of food, drug and cosmetic supplies. This building now houses the new Detroit District Office of the Food and Drug Administration; furthermore, in honor of the present Federal Food and Drug Commissioner, Dr. George P. Larrick, it is named the George Potter Larrick Building. This

new FDA District Office, which will be the second largest in the country, is the first new one to be established in twenty-four years. The establishment of the Detroit District was recommended by the Citizens' Committee which studied the needs of the Food and Drug Administration some years back.

Merck and Parke, Davis Labor Contracts

New wage rates amounting to an average increase of five per cent for 2,900 production and maintenance employees of Merck & Co. have been agreed upon effective May 1. The negotiations were concerned only with basic wage rates in accordance with a "reopening" provision in the current contract which was signed a year ago and expires May 1, 1960. Employees covered include about 1,200 at the Rahway Plant, 1,100 at two plants in the Philadelphia area, and 600 at the Cherokee Plant, Danville, Pa. The union involved is the Oil, Chemical and Atomic Workers (AFL-CIO).

During the negotiations the union also accepted Merck's offer to extend its new Employee Stock Purchase and Savings Plan to production and maintenance employees. Under this plan an employee may choose to save two to five per cent of his pay and the company will contribute an amount equal to 50 per cent of this sum. The combined funds will be invested in a combination of securities, including part Merck stock. This plan, approved by Merck stockholders, will cost the company about $800,000 per year and will go into effect July 1.

Parke, Davis & Company has been able to get a three-year contract with the Oil Chemical and Atomic Workers, as well as the Machinists Union. P.D. previously had a three-year contract from 1950 to 1953. Prior to that, contracts were for one year and, subsequently, for two years. Both the new contracts expire May 1, 1962, with a wage reopener for the third year. Chemical workers agreed to eight cents an hour for the first year, seven cents for the second year, and a wage reopener for the third year. The Machinists settled for four per cent the first year, two and one-half per cent for the second and third years for the "skilled" group, and eight cents, seven cents, and six cents for the "general" mechanical group. In addition to wage adjustments, new pension, group life insurance and hospitalization programs were agreed upon which will run for five years. Other economic and fringe benefits were essentially the same for both groups.

FTC v. Pfizer Advertising

The Federal Trade Commission charges that advertising by Chas. Pfizer & Co. for its antibiotic, Sigmamycin "has misled practicing doctors to prescribe the product for patients." The challenged advertising, mailed to members of the medical profession throughout the country, contains reproductions of doctors' business cards and prescriptions. The names shown are fictitious and are not those of actual practicing doctors who had prescribed or recommended the drug, the Commission charges.

This is merely a case of the FTC jumping aboard a situation that has been thoroughly aired, and otherwise completely forgotten.

Hospital Drug Sales

About 25 per cent of all prescriptions are dispensed in hospitals, and almost one-third of every hospital-supply dollar, or seven per cent of the hospital's total expenses goes for pharmacy expenses, L. Eugene Daily, M.D., of Eaton Laboratories Division, the Norwich Pharmacal Company, told the Rutgers Pharmaceutical Conference last month. Pointing out that the average hospital pharmacy carries about 7,000 items, he said:

"Think of how this total volume could be stepped up when there are pharmacists in charge of pharmacies in the 3,000 hospitals now operating without pharmacists, and also when pharmacies are installed in the 48 per cent of small hospitals, that is, from 50 to 99 beds, which are now without a pharmacy and pharmacist. Our local hospital with 67 beds has had a part-time pharmacist for several years who is with us approximately two hours each morning. . . .

"There are several factors directly influencing this increase in sales of drugs in and through hospitals. One is the very rapid growth in the number of physicians who practice full or part time within the hospital and frequently maintain their offices there. Prescriptions that used to be filled in retail pharmacies are now being filled in hospital pharmacies. Another factor in the increased use of drugs in hospitals is the increased coverage of drug costs by hospitalization insurance."

PMA and HNI

The Pharmaceutical Manufacturers Association, representing the ethical drug manufacturing industry, has announced its willingness to assume financial support of the activities of the Health News Institute. Others may continue permissive contributions to support of HNI. While PMA and its predecessors, ADMA and APMA, have been the principal financial supporters of HNI, additional amounts have been provided my the NWDA, the FWDA, the NARD, the A.Ph.A., the NACDS and the Proprietary Association.

But the PMA is apparently taking over control by the election of its own paid president, Dr. Austin Smith, to the presidency of HNI, and a change in the by-laws by which the HNI president becomes the chief executive officer of that organization. Kenneth F. Valentine, president of Pitman-Moore, has been re-elected board chairman of HNI.

The extent to which PMA takes over more complete financial support of HNI will not be entirely apparent until next year when other contributors will

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or will not renew their pledges for support.

Executive vice-president Chet Shaw remains the active operational head of HNI. Other officers are: vice-presidents—J. Mark Hiebert, M.D., H. W. Blades and James E. Allen, Treasurer—S. Barksdale Penick, Jr.; Secretary and Counsel—John K. Worley.

Avon's Expansion

"Increased business, welcome as it is, creates certain problems," Avon Products president John A. Ewald told company stockholders at the recent annual meeting. "Not the least of these problems has been the demand for further space for our manufacturing laboratories and sales and distribution branches. Planning for expansion of present facilities—or, as in some cases, planning for construction of new facilities—to handle our increased production and distribution is a continuing and healthy task. Among other things, serious study must be given to population trends, labor supply, availability of transportation, transportation costs, and local taxes."

The company, said Mr. Ewald, has in construction a sales and distribution branch in Rye, New York, to be in operation some time next year. By the fall of this year, the company will be operating a new building in Monrovia, California, a warehouse and shipping unit for the West Coast area. Both these buildings will release more space for manufacturing. Also, land in Newark, Delaware, is being bought as a future site for a Middle Atlantic States branch.

In Canda, plans are being drafted for a combined manufacturing laboratory and sales distribution branch in Pointe Claire, near Montreal, with occupancy planned for 1961. In the foreign field the company has leased a combined manufacturing laboratory and sales distribution branch in both Brazil and Great Britain. The Brazil laboratory is in production with selling starting in July, and in the British laboratory production will start this summer, selling in the fall.

Avon's first foreign venture was in Puerto Rico in 1954. This was followed by Venezuela later in 1954, Cuba in 1955 and Mexico in 1958. During 1959, the company will enter Germany, Great Britain and Brazil, and will have completed the foreign expansion plans formulated in 1953.

People in all countries have given a fine reception to the company's products and its method of selling, said Mr. Ewald. International Division sales for 1958 (Canada not included) were 4.2 per cent of the total. This year should witness substantial increases in foreign sales, but the impact of Germany, Great Britain and Brazil will not be felt until 1960. International Division's have been small because of development and start-up expenses. In 1958 these profits amounted to 3.2 per cent of total earnings.

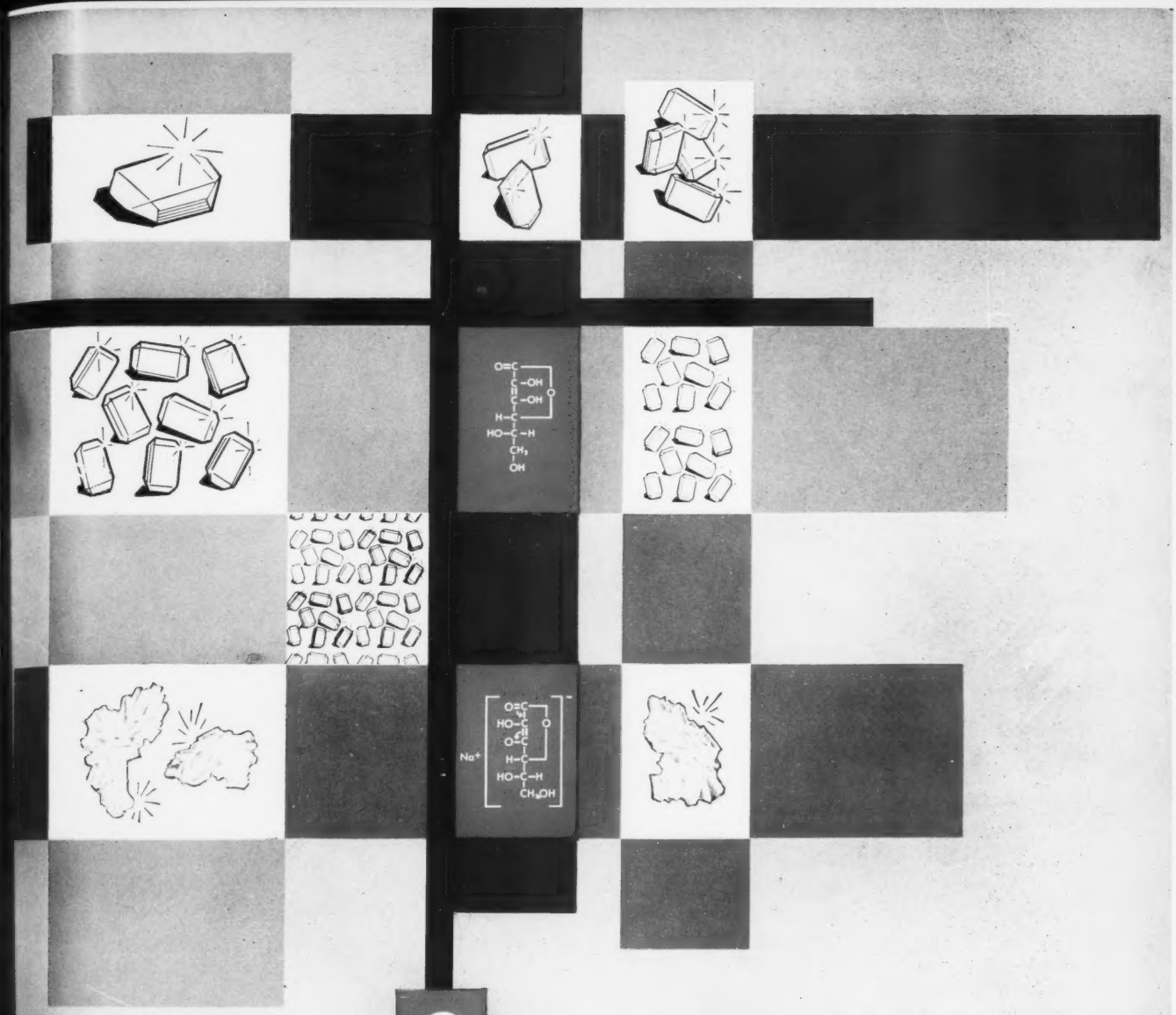
The company has no present plans for entering other foreign countries because they want to concentrate on the development and improvement of existing foreign operations.

Health Insurance Increasing

At the end of 1958, 123 million persons were protected against the cost of hospital care through voluntary health insurance programs, a new record, and an increase of 1.5 million over 1957. Benefit payments to help cover the cost of hospital, surgical and medical care alone established a new record of $3.9 billion in 1958, up $400 million from 1957. In addition, insurance companies in 1958 paid $782 million in benefits to persons with loss-of-income policies. This figure brings the total payments for 1958 to $4.7 billion, for an over-all increase of 9.8 per cent over 1957, according to the Health Insurance Council. These figures include health insurance programs of insurance companies, Blue Cross-Blue Shield and independent health care plans.

Based on the early trend of 1959, the Council estimated that, as of June 1, some 124 million persons were protected against hospital costs, 113 million were covered for surgical expenses, 77 million had policies covering regular medical expenses, and 19 million were insured against major medical expenses. Thus, by June 1, some 71 per cent of the total U. S. population was protected by some form of health insurance.

Major medical expense insurance, which helps absorb the cost of serious or prolonged illness continued to show the greatest rate of growth, with coverage through insurance company programs increasing since 1957 by four million persons, or 31 per cent, to 17,375,000 persons. Hospital care insurance covered the greatest number of persons—by insurance companies to 71,798,000; by Blue Cross-Blue Shield to 55,205,000; and by independent plans to 4,865,000. Making allowance for persons covered by more than one insurance organization, 123 million were protected, an increase of 1½ million over 1957. Surgical expense insurance for cost of operations was extended by insurance companies to 69,125,000 persons; by Blue Cross-Blue Shield to 46,424,000; and by other health care plans to 5,572,000. Allowing for duplication, 111.4 million persons were protected, an increase of 2½ million. Regular medical expense insurance, providing for doctor visits for nonsurgical care, accounted for 38,860,000 persons through Blue Cross-Blue Shield; 35,142,000 through insurance companies; and 6,015,000 under independent plans, for a total, eliminating duplications, of 75.4 million persons, an increase of 3½ million. Loss-of-income insurance policies covered 31,670,000 persons. The number who work where there is a formal sick leave payment arrangement brings the total to 41,870,000 persons, a decrease of one million from 1957.



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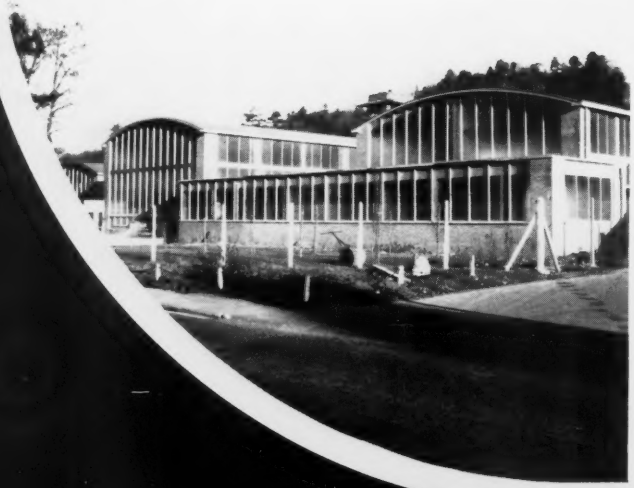

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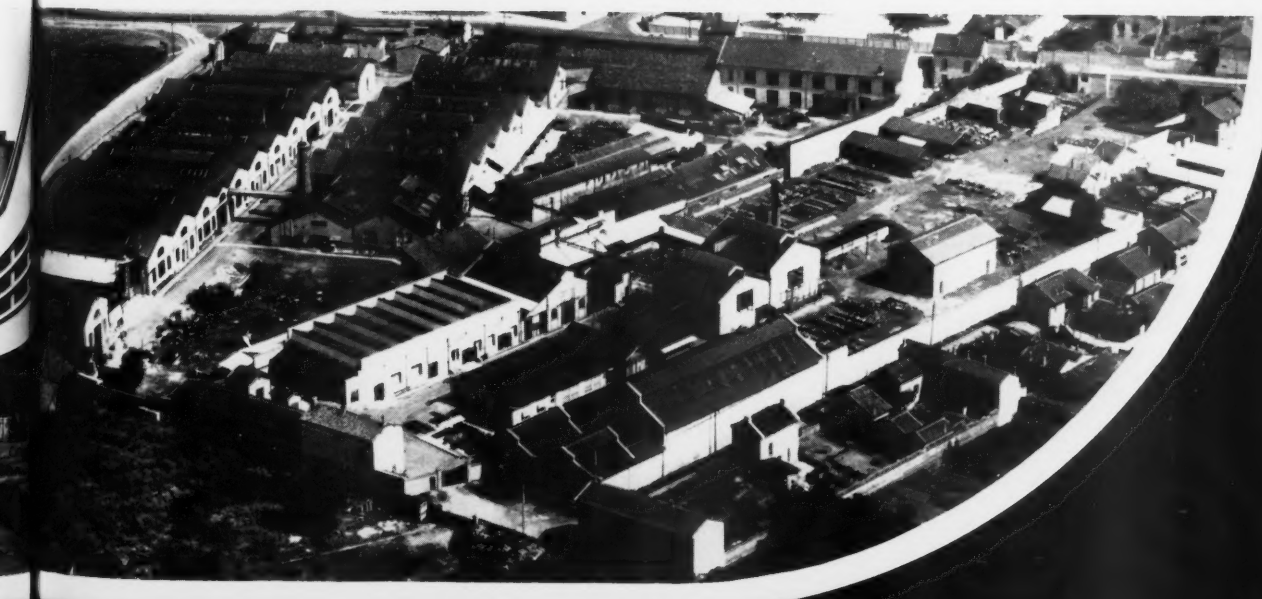

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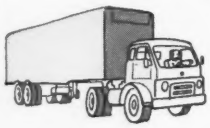

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Assay (as *)	99.8%	36.5-38.0%	69.0-71.0%	95.0-98.0%	28.0-30.0%
Residue After Evaporation or Ignition	0.0010%	0.0004%	0.0004%	0.0004%	0.001%
Carbon Dioxide (CO_2)	–	–	–	–	0.002%
Chloride (Cl)	0.0001%	–	0.00005%	0.00001%	0.00005%
Phosphate (PO_4)	–	–	–	–	0.0001%
Sulfate (SO_4)	0.0001%	0.0001%	0.0001%	–	–
Sulfite (SO_3)	–	0.0001%	–	–	–
Total Sulfur (as SO_4)	–	–	–	–	0.0001%
Substances Reducing Permanganate	**PACST	–	–	0.0001%	**PACST
Nitrate	–	–	–	<0.00005%	–
Ammonium (NH_4)	–	0.0003%	–	0.0001%	–
Arsenic (As)	–	0.000001%	0.000001%	0.000001%	–
Heavy Metals (as Pb)	0.00005%	0.0001%	0.00002%	0.0001%	0.00005%
Iron (Fe)	0.00002%	0.00001%	0.00002%	0.00002%	0.00001%
Copper (Cu)	0.00005%	0.00005%	0.00005%	0.00005%	–
Nickel (Ni)	0.00005%	0.00005%	0.00005%	0.00005%	–
Specific Gravity	–	1.185-1.192	1.416-1.424	1.84	0.902-0.896
Free Chlorine	–	0.0001%	–	–	–
Substances reducing $K_2Cr_2O_7$	PT	–	–	–	–

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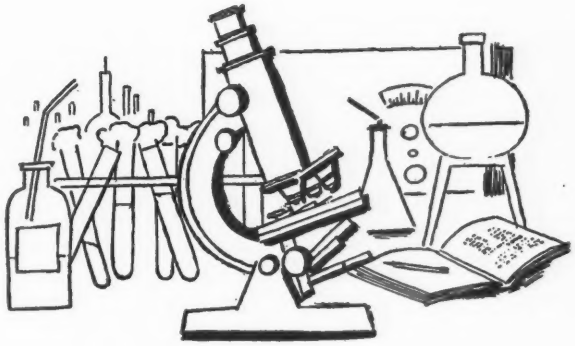
BY ROBERT L. GOLDEMBERG



Jones, we have very reliable information that Gigantic Toiletries is coming out with an aerosol bubble bath which you just squirt under water to get a tub full of bubbles. No more worrying about the water pressure and temperature in Oshkosh. You'd better drop what you're doing and do a quick job on this one."

And off goes the A.B.C. lab on another wild goose chase. Later, it turns out that the advance tip on Gigantic's plans was not quite accurate. In due time they do market an aerosol bubble bath, but a *nitrogen* propelled one which meters out a slug of their very standard liquid bubble bath formula, depending as usual on the water pressure and temperature in Oshkosh and everywhere else it is used.

Meanwhile, back at the bench, one of the better A.B.C. formulators is still racking his brain trying to pack enough non-corrrosive bubbles in one can to fill 6-8 bath tubs full of soapy hard water. He has tied up half the aerosol lab's facilities for a couple of weeks, lost a few more friends for the consumer research department, and temporarily dropped a very promising research project in order to get this "simple" request out of the way. By the time he gets back to his promising project, it has grown cold in his notebook and he can't remember why he did those last few experiments.

This is THE PANIC-BUTTON APPROACH to research. Every management will admit that it is foolish and costly in time and effort. None is completely immune to it, no matter what pious platitudes are woven into their standard pep talk to newly hired chemists or visitors being shown through the "long range research" labs. Crash priority project switching of this sort results in laboratory personnel who are in a constant frenzy of activity and are forced to write reams of "progress" reports because they never get to finish any one project to anyone's satisfaction.

Blue Sky Projects

There is another approach to research, THE BLUE SKY APPROACH. "Give me something new," says the president. No "me-too items" for this company! No sir! For $150,000 a year he expects three or four absolutely stark raving new products—which will sell all by themselves without any costly "educational" advertising, of course!

This approach completely ignores the fact that the whole industry may come out with only three or four really *new* products in a *decade*, much less in a year. What are the chances for one company, for a particular chemist, to hit *one* such jackpot in a year, in a decade? Will management really be willing to wait that time? Will it support a long range research lab doing nothing but really new work for that amount of time? Of course not! From the company's point of view, it just doesn't make sense. The effort would not pay for itself under any accounting system you could devise.

And when it comes right down to it, how long did the indelible lipstick, the cold wave, and the low pressure aerosol package remain the exclusive property of any one company? What are the odds that you will be willing to divulge enough information to get strong patent coverage on that great new discovery which can revolutionize the industry? And what are the odds that no matter how strong, the patent will hold, if enough people ignore or fight it for 15 years as they did the McDonough thioglycolate cold wave patent. No discovery of the sort which every management, lab director and bench chemist dreams of will ever remain their exclusive property for long if it really revolutionizes the industry.

Yet no one can deny that the companies pioneering major changes also reap major benefits from doing so. Let's not scratch this approach completely, then. Rather, try to keep it within reason.

Hop on the Band Wagon

There is, of course, the very well-known third approach to research assignments, the approach nobody likes to admit, but which probably determines more research than any other. This is THE BANDWAGON. Why risk anything on "basic work" which pleases your chemists so much that they insist on talking about it and publishing papers to educate your competitors? No! Depend instead on a few experienced hacks who have been in and out of every lab in the industry and know all the standard formulations. Depend on agile formulators backed up by

(*Continued on page 808*)

TGA ANNUAL MEETING

With its theme, "Power of an Idea," the TGA launched another successful convention. Before the main business activities began, however, the Ninth Annual Toilet Goods Industry Golf Tournament, including over 200 golfers and more than 250 attended the banquet at which trophies and prizes were presented. The Cecil Smith Trophy was awarded to Clifford M. Baker, Jr., of Chesebrough-Pond's, Inc.; the B. M. Douglas Trophy went to Richard A. Malmstrom of N. I. Malmstrom Company; the B. E. Levy Trophy was won by Alex Alexander, Jr., of Mary Chess, Inc.; and the Maple Leaf Trophy went to Walter D. Morton of the Hazel Atlas Glass Division of the Continental Can Company.

Mrs. Estee Lauder presenting the Charles S. Welch awards (left to right): Douglas Martin, first prize winner; Mrs. Lauder; Dorothy Hull, second prize winner; and G. B. Chandless, third prize winner.

After a welcome by President Arthur E. Johnston of the TGA and a short documentary film, the program was started by Edwin Ebel of General Foods Corp. on "The Birth of an Idea," followed by "Ideas Must Be Interesting" by Charles W. Ferguson of *Reader's Digest*. Gypsy Rose Lee discussed "What It Means to Be an Idea" and George R. Marek of RCA Records covered "Ideas in Music." At the break for luncheon, Jane Trahey was narrator for the *McCall's* magazine fashion show. Afternoon talks on the same theme were by Dore Schary on "Hollywood, Broadway and Ideas," by Hildegarde, "Ideas Need Audience Participation," by Louis G. Cowan of Columbia Broadcasting System Television on "A Biography of Ideas," and by Herbert Mayes of McCall's on "The Fastest Growing Idea." Paul Carey of Tussy Cosmetics brought the program to its conclusion.

The TGA cocktail party closing the day was heavily attended.

John M. Duncan, CIBS president, presenting the annual CIBS award to Dr. Paul G. I. Lauffer, Research Director, Northam Warren Corp.

In the second day session, President Arthur E. Johnston reported on the year's activity of the Association. He noted that nearly 800,000 of the TGA educational booklets have been distributed through teachers and students to about 5,000 high schools and colleges. The Scientific Advisory Committee under the leadership of Hal Goulden was praised for its assistance to the industry. The work of Steve Mayham and Fuller Holloway was praised for its effectiveness in the fields of Federal and State legislation. The work of the various committees of the Association as well as of the staff members was praised by the President.

Asher Blum presented a paper on "Process and Product Patents" and discussed the two questions: Can a valid patent be secured on a new use of an old material? Can such a point cover the use of a material which is not specifically described in the patent?

In the election, all officers and directors were reelected. Charles S. Oestreich of The Lander Company was elected a director for a three-year term and J. S. Wiedhopf of Roure-Dupont, Inc., was elected director for one year, representing associate membership.

At the second day luncheon, the annual Charles S. Welch Memorial Awards were made for the six best essays submitted on the topic "Motivation of Unplanned Purchases of Toilet Goods in Drug Stores." Prizes were presented by Mrs. Estee Lauder to Douglas Martin, first prize; Dorothy Hull, second prize, G. B. Chandless, third prize, and honorable mention to Patrick Devaney, David Schoen and Milton Loeb. The work was done as part of the regular

(Continued on page 792)

THE DIFFICULT ROAD TO NEW PRODUCTS

IDEA FINDING

BY R. E. LUX, Ph.D., PRODUCT PLANNING DIRECTOR, PHARMACEUTICAL PRODUCTS, MEAD JOHNSON & COMPANY

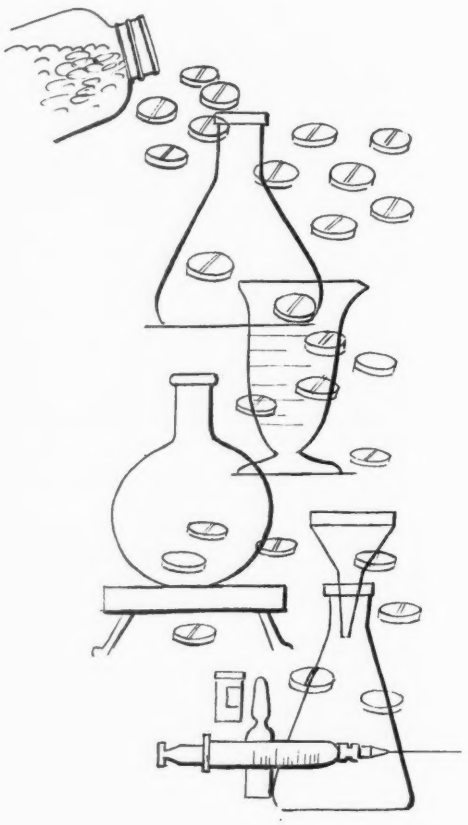
The Nature of Product Ideas

Not all new product ideas are as exotic as some of those encountered in the pharmaceutical industry—for example:

> A correspondent, while motoring through the jungles of a South American country, observed an unusual incident: One of the laborers, engaged in clearing land with his machete, suddenly wounded himself.
>
> A fairly vigorous bleeding ensued. Not unnerved, he immediately ran to a tree, plucked a leaf and applied it to the wound.
>
> The hemorrhage stopped instantly, and the laborer returned to his work.

Our correspondent suggested that this leaf of an unnamed tree might therefore be useful in medicine. After investigation, for various reasons, the idea was rejected.

New product ideas are like a spirit since they lack substance and are difficult to apprehend. Many new product ideas are vague, often tenuous. Yet each new product idea represents someone's reasoning process. Each idea has a spark, or contains a germ of something new—and this must be searched out. Indeed, the idea just cited contains a spark of truth, for the leaves of certain trees are high in tannin content. And tannins have long been used in the treatment of burns and superficial wounds.



Our Problem—Diversification

Mead Johnson & Company—in common with other progressive companies—has been strongly motivated to diversify its product lines.

Beginning in the early 1950's, two things were done to set the stage for effective administrative action. First, the basic research program was expanded. Secondly, management recognized the need for extraordinary measures to reduce the chance for product failures, in unfamiliar fields, to an irreducible minimum.

Considerable study revealed that the latter objective could be best achieved by a product planning department. Product planning became a fact at Mead Johnson in January, 1956.

Top Management Decisions Came First

What kinds of product ideas should be sought? Are these to be long-range or short-range product ideas? If idea finding is to proceed without stumbling, the answers to some basic questions involving company policy had to be decided.

In the case of Mead Johnson, we asked five questions of ourselves:

1. What are the company's fields of interest? We had to ask ourselves if we were interested in drugs for animals, as well as drugs for human beings. Further, what about drugs for the dental profession?
2. What are company objectives? We had to know what kind of growth our president wanted to achieve. Further, what kind of corporate image did we desire?
3. What were the real resources of Mead Johnson & Company? We had to decide upon the scale of research effort that could be supported, for an indefinite period, without an appreciable return. We had to consider that men with new

skills, pharmaceutically trained, would have to be recruited.

4. What problems were inherent in Mead Johnson & Company which would limit the attainment of the desired goals? Fortunately, Mead Johnson possessed a loyal and highly motivated employee group. This proved to be a major advantage in overcoming the problems which arose later.
5. Finally, we had to decide what opportunities were believed to exist which could be exploited particularly well by Mead Johnson. Our decision included the pharmaceutical area. We were specifically interested in ethical specialties, or exclusive-type drugs which would be promoted only to the physician.

The answers to the preceding questions are a good deal like the basic English of expansion. You can't talk of finding product ideas until you have a clear notion of what you are looking for. The answers to these five basic questions became our new product policy. This policy was reflected in the set of criteria against which all new product ideas were measured.

All idea generating sources within the company were identified. A collection network was organized. In a very short time, the finding of product ideas was organized to a degree which insured missing no "bets" and leaving no stone unturned.

Where The Product Ideas Come From

You will be interested in the productivity of the various idea sources at Mead Johnson. The over-all breakdown is as follows:

Laboratory Technical Personnel	60%
Lay Sources within the Company	30%
External Sources	10%
(of which 4% are doctors)	

So-called internal sources account for 90 per cent of our product ideas. External sources account for only 10 per cent.

Company scientists are the most productive single group in our company. This is to be expected, since the pharmaceutical business is highly technical in nature. Further, we, as other progressive people in our industry, cultivate foreign technical sources intensively. In this operation, a finding team spends full time combing various foreign idea sources.

Lay sources, including plant and office workers and sales representatives, are our next most productive idea group.

Purely external idea sources account for 10 per cent of our firm's ideas. Many ideas come in unsolicited from both laymen and physicians.

Product Planning Contributions

The product planning group, in itself, can be counted upon for creating product ideas which should yield a high proportion of "hits." This results from be termed "conditioned" gestation. By this I mean that this group, from their experience in screening and appraising the product ideas of others, develops an instinct for the types of products which should "go." Their gestation of potentially profitable ideas is thus conditioned by wide experience.

Secondly, a product planning group is more highly committed to product ideas than any other group in the company. It spends all of its time finding, screening and evaluating product ideas. This group, after gaining experience, can therefore be looked upon as a very important idea source.

Our Record

Our record in idea finding is probably representative of a firm in the pharmaceutical or chemical business, $60 million in size, having about 2500 employees.

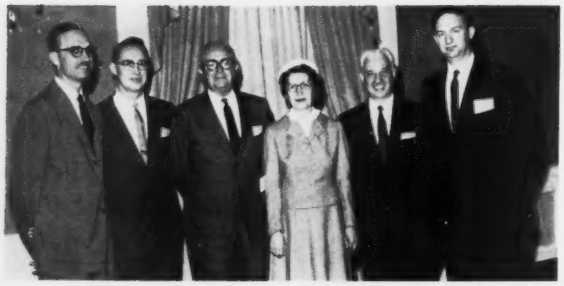
The year 1958 was a typical one. During the year 348 product ideas were received. Of these, 318 (91 per cent) were quickly screened out. The remaining 9 per cent were subjected to comprehensive study by product planning. Since 31 such detailed evaluations were carried out in 1958, our department has the capacity to average nearly three such evaluations a month.

Fifty per cent of the product ideas comprehensively evaluated in 1958 were rejected after deep study. The remaining 50 per cent were rendered in terms of a concrete business proposal to top management. Thus, in 1958, 4.6 per cent of our product ideas deserved serious company consideration. From this point on—called the evolution phase of the product—attrition will be heavy. It can be predicted that less than one per cent of the 1958 product ideas will go to market.

Briefly, then, the methodology of successful idea finding involves two steps. Top management decisions on company objectives are an essential preliminary. These decisions, translated into a set of operating criteria, then guide all idea finding. Thus the first step—and a very important one—down the difficult road to evolving new products has been provided for.

SCC MID-YEAR 1959 MEETING

S.C.C. president Savery F. Coneybear presenting the Society's Annual Special Award to Dr. Irvin H. Blank of the Harvard Medical School.



In the usual order: Robert A. Kramer, secretary; Stillman R. Goff, director; Savery F. Coneybear, president; Sophie L. Plechner, director; H. J. Amsterdam, president-elect; and Lester I. Conrad, treasurer.

The Semi-Annual Technical Meeting of the Society of Cosmetic Chemists was marked by the presentation of the Society's Special Award to Dr. Irvin H. Blank of the Harvard Medical School and Massachusetts General Hospital. At the luncheon, attended by almost 400 members and guests, H. J. Amsterdam, President-Elect of the Society and Chairman of the Special Award Committee, described the extensive labors of the Literature Research Committee in studying the large volume of literature from which the choice was finally made. Professor Leon Goldman of the University of Cincinnati College of Medicine described the background and work of the award winner. Savery F. Coneybear, President of the Society, made the presentation.

Dr. Blank in his talk made a plea for better communication between cosmetic chemists and dermatologists, other chemists, management of cosmetic companies, and advertising copy writers. Lack of understanding between dematologists and cosmetic chemists has led to unnecessary friction and imperfect appreciation of respective goals, he said; only progress can result from the development of mutual respect. Chemists should be less hesitant about sharing information with their chemical colleagues when the information is of a nonconfidential nature. In matters involving their technical and scientific fields, chemists should not be reticent about bringing necessary information to the attention of top management; they should, especially, work closely with advertising copy writers to provide useful copy ideas as well as correct facts about what products may be expected to accomplish.

Left to right: Speakers at the meeting: Isaiah S. Botwinick; Charles Merritt, Jr.; J. J. Travers; R. D. Charles; Wilton R. Earle; L. D. Apperson, program chairman; D. E. Koshland, Jr., and Morris J. Root.

The technical sessions, organized by program chairman L. D. Apperson, were well attended and provided widely diversified papers.

I. S. Botwinick, Research Testing Laboratories, discussed *Measurement of Skin Moisture by Potentiometric Methods.* The method measures the amount of moisture in the keratin and intra-dermal layers of the skin. A specific amount of electric current is introduced into various layers of skin using an original circuit. There is a potential difference or drop between the electrodes, which is proportional to the resistance between the electrodes or inversely proportional to the moisture present in the skin layer being tested. *(Continued on page 815)*

PREMENSTRUAL TENSION

BY BERNARD IDSON, PH.D., RESEARCH DIRECTOR, JULIUS SCHMID, INC.

At least half of all women experience personality disturbances about a week to ten days before menstruation. The distressing symptoms reach a peak shortly before menstruation, and disappear dramatically following the onset of the menstrual flow. In the United States, roughly 20 to 30 million women suffer these distresses. Statistics are now available to show that about thirty-six per cent of female industrial workers require sedation or other medication in their premenstrual week. Loss of time varied according to the type of activity, being slightly higher in the sedentary occupations. Some 36 to 43 absentee lost days per month per 100 women is estimated. Annual wage loss of about $16,000 per 100 female employees is reckoned. The extent of female disturbance is shown by a survey that 84 per cent of all crimes of violence in Paris, by women, were committed in the premenstrual phase of their cycles. A U. S. study confirmed that only two per cent of violent crimes were committed by women during their post menstrual phase.

Physicians, until recently, gave little heed to these tales of cyclic tensions. They glossed over the symptoms with figurative shrugs to indicate that this was the "nature of a woman." Sedatives were usually prescribed and just as usually were ineffectual. Nothing could have been worse for the patient, whose nerves were already on edge, than the bland assumption that she was imagining things. In the more severe cases the patients were usually referred to psychiatrists. These responses have now almost completely changed as doctor and patient become aware of the nature of the tensions. However, it is still the rare woman who visits her doctor expressly for premenstrual tension. It is rather the astute physician who notes that this is the "real" cause of her visit.

In the "average" women there may be nervous instability, depression, temper tantrums, crying jags, irritability, lack of energy, drowsiness, loss of appetite or compulsive gobbling, especially of sweets. At this time a woman's attitude toward sex relations may change drastically. She may find herself apathetic toward her husband or embarrassed by her sexual appetite. The physical disturbances are as varied as the emotional. Women report backaches, headaches, nausea, vomiting, dizziness, nasal congestion, coughing, sneezing, bloating of the abdomen, swelling of the feet and breasts and especially increases in body weight. A weight gain of 4 to 6 pounds is not unusual during this time. As with any clinical entity, not all of the symptoms may be present in a single woman. Rather, it is the periodic and

spectacular alteration of personailty which is the pattern.

Specific causes of premenstrual tension are difficult to pinpoint. Three basic theories ascribe the symptoms to psychologic factors, hormonal imbalance and a menstrual toxin. The latter poison is believed to be a product of tissue breakdown during the menstrual cycle. The tension is attributable to an excess adsorption of a toxin from a persisting secretory endometrium.

The psychological basis ascribes severe premenstrual tension to difficult adjustment problems, coupled with a rejection of certain aspects of femininity. Hormonal imbalance is obviously involved to a great degree. The ovaries produce an ovum about the fourteenth day of each menstrual cycle. As soon as the ovary begins to develop the egg, it also produces large quantities of estrogenic hormones until menstruation. After ovulation, the ovaries produce progesterone in quantities increasing steadily until menstruation begins. Hormonal imbalances result. The mechanism of premenstrual tension, due to altered hormonal ratios, rests in the retention of sodium ions by excess estrogens. This results in excessive fluid, or edema, in various tissues. This might explain the large weight gains. Since any tissue might be affected, it also explains how different women may have different complaints, such as headache from a brain edema or swollen feet if fluid is lodged in foot tissues. A further alteration of carbohydrate metabolism can result in personality disturbance and fatigue. This hypoglycemia, or lowering of blood sugar, partially explains the abnormal craving for sweets. The action of estrogen premenstrually, unopposed in the absence of sufficient progesterone, results in the water retention and hypoglycemia, both of which cause the curious symptomatic combinations of premenstrual tension. Actually, premenstrual distress might not be called an illness, but rather proof that the genital

organs are performing their functions and that the normal process of ovulation has taken place. However, the relative roles played by each hormone and the influence of alterations in other hormones, such

as the antidiuretic principle of the posterior pituitary, is not clear.

Preparations used in the treatment of premenstrual tension are those for relief of the varied symptoms. The Physicians' Desk Reference for 1959 lists over 130 products for premenstrual tension. Actually, only about a dozen are marketed specifically for premenstrual distress. The others are diuretics, analgesics, sedatives, antispasmodics, hormones, etc. Hence, a listing of the products would only serve to confuse.

Rational treatment has been based on correction of hormonal balance, removal of excess fluid and relief of pain. Many gynecologists tend to believe that the premenstrual syndrome is a water toxemia with the intensity of symptoms varying with the amount of excess stored fluid. They aim at removal of this water and accompanying salt. Simple restriction of salt has not been very successful because this is usually distasteful to the young active woman whose school or business activities, household duties and children leave little time for special dietary care of herself. Diuretics are more effectively used to relieve the edema.

Ammonium chloride was first used with quite some success, but it is not always well tolerated and tends to alter acid-base balance by reducing the serum bicarbonate. The proved diuretic usefulness of theophyllin and its ethylenediamine derivative, aminophyllin, have prompted the use of these xanthines. They are of value, as diuretics, by their effect in increasing glomerular filtration, and by inhibiting the tubular reabsorption of chloride and sodium. The 2-Amino-2-methyl-1-propanol derivative of 8-bromo theophyllinate (Pamabrom) has been advocated particularly for premenstrual tension. Synergistic value is claimed for its combination with the antihistamine, pyrilamine maleate. Neo-Bromth (Brayten), M-Minus Five and Pambronal (Whittier), Neoparbel (Central), Neo-Mensalin (Walker), Neo-Pyrapar (Ulmer), and Sanbrom (Dorsey) all utilize Pamabrom. Trilute Capsules (Polythress) combine theophyllin, pyrilamine maleate and their antispasmodic, trocinate.

The mercurial diuretics were the most popular, prior to the introduction of the sulfa derivatives. They act by inhibiting the reabsorption of the chloride ions thus forcing the excretion of sodium, potassium and water. Typical examples are Lakeside's Mercuhydrin and Neohydrin.

The sulfa type diuretic acts specifically by inhibiting the enzyme, carbonic anhydrase. They achieve diuresis by slowing down both the reversible hydration of carbon dioxide and the dehydration of carbonic acid, in the kidney, resulting in the renal loss of bicarbonate which carries out water, sodium and potassium. Diamox (Lederle) and Diuril (Merck Sharp & Dohme) are the two chief representatives. Diuril has moved ahead in the premenstrual tension field as rapidly as it has in the whole diuretic field. Its potency and freedom from adverse electrolyte action has made it a prime diuresis treatment, with a prescription volume buildup of almost thirty million dollars in about a year of use. The introduction of Esidrix (Ciba), known generically as hydrochlorothiazide, may eat into this enviable figure. However, not all the symptoms of premenstrual tension can be explained on the fluid retention basis, nor can they be prevented or alleviated by the restriction of salt intake and the administration of diuretics.

The hormonal approach has naturally centered on the use of progesterone. This hormone has been administered parenterally, orally, bucally and intravaginally. Actually, progesterone is not well absorbed by the oral route, and anhydrohydroxyprogesterone (Ethisterone) is the progestin of choice. Intravaginal administration (Colprosterone, Ayerst) is claimed to give more predictable response than oral, buccal or sublingual therapy. Since excess estrogen is claimed to be harmful, vitabin B complex has been used to help detoxify the estrogens in the liver. The recent more potent progestins, such as Enovid (Searle) and Norlutin (Parke-Davis) have gained in prescription popularity since they are more effective at lowered levels. Testosterone has been widely used, but dangers of hirsutism or, of masculizing, prompt caution. Some clinicians have had more success with pregnanediol than with progesterone. Pregnanediol is a metabolic product of progesterone, with no known biological activity of its own. Its effective use might indicate an endogenous allergy by some to progesterone.

Since disturbance is a prime symptom, tranquilizer manufacturers lost little time in testing their effects. Miltown (Wallace), Equanil (Wyeth), Eskaserp (S.K.F.) and others are used widely, especially where no somatic ailment can be found. Analgesics and bar-

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MOISTURE REGULATION IN THE SKIN*

BY OTTO K. JACOBI, PH.D.
KOLMAR RESEARCH CENTER, WIESBADEN, GERMANY

COURTESY ESTEE LAUDER

Physiological knowledge regarding the skin surface has been greatly advanced in the last ten years. Previously, the stratum corneum had been popularly considered to have only a mechanical or thermomechanical function and to consist only of dead cells being cast off as an excretion product of the body. Sebum was believed to be a lubricant and a protector of the "hygroscopic" keratin of the stratum corneum from being wetted by water. Today we know that the stratum corneum consists not only of sebum and dead keratin, but also, in addition to many other constituents, a mechanism for water and moisture control.

The stratum corneum is only 20 to 40 micra in thickness on most parts of the body; it may run 400 to 600 micra in areas of callous formation and on the palms of the hands and feet[1]. In spite of its relative thinness, it serves very well to protect the deeper layers against the weaker forms of mechanical and chemical injuries and to insulate the organism from its environment. It is quite flexible but a poor conductor of heat and electricity. Alkalies and acids are effectively buffered by it. The self-sterilizing action of the skin and protection against bacteria reside chiefly in this cell layer. In addition, the insensible water loss through the skin is mainly regulated by this layer[2]. Carbon dioxide also passes through the stratum corneum and it has been calculated that men lose about 4 liters in 24 hours in this manner. It becomes apparent then that the keratin covering is certainly partially responsible for the regulation of penetration of fluids and gases through the skin. The maintenance of all of these normal functions is accomplished by three main components of the stratum corneum: (1) the keratin of the horn cells, (2) the lipids, (3) the water-soluble hygroscopic and surface active substances. Defects in any of these will result in dermatologic disorders of cosmetic importance.

Insensible desquamation of small scales of horny cells is constantly taking place and goes largely unnoticed. The flexibility of this layer and the amount of shedding which takes place is largely dependent upon the layer's water content. This, in turn, depends primarily on the quantity of water soluble hygroscopic and surface active materials present. These components of the horny layer may be called collectively "Natural Moisturizing Factor" of the skin or NMF.

The surface active properties of NMF led to its discovery; we found that the skin is less wettable by water if the lipids and water soluble components of the stratum corneum are first removed. In addition, many experiments on human hair and living human skin and on wool showed that the water content of the stratum corneum and the keratin structures is essential for the normal function and appearance of these parts of the skin. The most important result of these investigations was the discovery that the cornified epithelium contained compounds soluble in water and polar solvents and that these compounds are responsible for the wettability, water holding and water absorbing capacity of this tissue. These substances represent the NMF of the skin. Its removal reduces the water vapor absorption capacity of the keratin to a degree but stops the absorption capacity for liquid water entirely; in fact, the cornified epithelium becomes water repellent[3].

Shortly after their publication, these investigations were partly rechecked by Staras[4] and Schneider and Schuleit[5] and were subsequently confirmed by them. The same NMF was found some time later by Blank[6] in the course of his search for the barrier between the water-rich cell layers of the epidermis and the stratum corneum. He treated cornified epithelium with organic solvents to remove the lipids and found that when he subsequently extracted the horny structures with water he could remove relatively large amounts of strongly hydrophilic and hygroscopic materials; the removal of these materials greatly decreased the water-holding capacity of the cornified

*Presented at the Scientific Section meeting of the Toilet Goods Association, New York City, May 1959.

epithelium. The epithelium became dehydrated, absorbed very little moisture and had an increased brittleness or tendency to break when flexed. The flakiness and loss of flexibility accounts for the feeling and appearance of a dry, chapped skin. The loss of NMF was shown by us to be one of the main reasons for the development of rough, dry, chapped skin in certain occupational situations[7].

Flesch considers NMF to be one of the intricate defense mechanisms of the horny layer[8]. His experimental data also confirm that these compounds are responsible for the water-binding ability of the horny layer. In their absence the horny layer fails to break up into individual cells but forms large coherent scales. The normal shedding process is disturbed by the lack of NMF since the keratin then holds a great deal less water. This strengthens the concept that the NMF is responsible for the water-binding capacity of the horny layer which is essential to the maintenance of the normal shedding process. Chapping of the skin surface may result from an exhaustive extraction of the water-soluble NMF and removal of the sebum film by prolonged use of water and detergents. The production of NMF and its diffusion to the surface is probably decreased in cold winter weather and since the insensible perspiration is also decreased, NMF is not sufficiently replaced when it is removed by cleansing of the skin. In addition to this, the secretion of sebum is lowered in winter and the loss of this water repellent secretion permits an increased loss of NMF from the inadequately protected surface. It may well be that a deficiency of NMF accounts for the dryness of the skin in the elderly. Schneider and Schuleit[5] have pointed to the possibility of some relations between anomalies in the NMF content of the skin and seborrhea, acne and hyperhydrosis. Rothman[9] concluded that the stratum corneum cannot hold enough water if there is not sufficient NMF present as, for example, in the case of psoriasis. This causes loss of flexibility, brittleness and breaking with separation of visible scales. Since the flexibility of these structures depends primarily on their water content and the latter depends primarily on the amount of NMF present, its importance in these structures is evident once again. According to Szakall[10], the horny layer contains 58 per cent keratin, 11 per cent lipids and 30 per cent water-soluble NMF. The latter drops to 23 per cent in a sunburned skin and to 7 per cent in psoriasis scales. The author considers NMF to be the only source of the water binding ability, the buffer capacity, the reducing ability and the acid *p*H of the stratum corneum. A horny layer without NMF is virtually devoid of all these properties.

Moisture Holding Capacity

In a recently published investigation[11] of the water and water vapor absorption of the stratum corneum of the living human skin, we were able to show that the NMF is responsible not only for the water and moisture uptake but also for the moisture holding capacity of the keratin structures. Horny tissue without NMF is repellent to liquid water but still absorbs water vapor to some extent. However, the stratum corneum when deprived of its NMF will release absorbed water vapors almost three times faster than untreated corneum. In other words, the pure keratin structures are able to absorb water vapors and conduct them just as a metal wire conducts electricity. In spite of this property, pure keratin is unable to hold significant amounts of water for any longer period of time. It will lower its water content immediately if the environmental humidity is lower than the moisture concentration in the keratin structure. This property of the keratin makes it an ideal material for hygrometers which must show any changes of humidity promptly. This would indicate that if the humidity of the environment decreased, the stratum corneum of the skin would rapidly lose its water content and the skin become dry, brittle and rough. Blank and others have proven that, because of the barrier, the amount of water vapor offered from the inside of the body is too small to counteract the loss by evaporation. If the keratin alone were responsible for the water balance of the stratum corneum, any drop in humidity would cause a dry, scaling, chapped skin. Fortunately, this is not true and certainly not everyone gets chapped skin in cold, dry weather. This is prevented by the presence of the NMF in the stratum corneum, where it serves a triple purpose:

1. It picks up moisture through its hygroscopic properties.
2. It lowers the surface tension of the skin surface; it overcomes the normal water repellency of the keratin.
3. It will absorb liquid water present on the skin surface from perspiration or from outside sources.

One might consider it the water reservoir of the stratum corneum since it stores moisture and water which are present there.

The investigators mentioned here and others have all come to the same conclusion: there is a physiolog-

(*Continued on page 810*)

COURTESY HELENA RUBINSTEIN

THE POTENTIAL OF PHARMACEUTICAL AEROSOLS*

BY SAMUEL B. PRUSSIN
VICE-PRESIDENT, AEROSOL TECHNIQUES, INC.

Formulations

Typical self-propelling pharmaceutical compositions[1] capable of providing a medicament in aerosol form suitable for inhalation therapy are given below. Medicaments other than those employed may be used. These include ergotamine, scopolamine, colchicine, cortisone, hydrocortisone, amyl nitrite, etc.

New Drug Considerations

In considering the new drug rationale for aerosols in the treatment of diseases via inhalation, the following factors should be taken into consideration:

1. The physical stability;
2. Chemical stability;
3. Particle size desired;
4. Pressure of the system;
5. Spray pattern;
6. Metering;
7. Rigid quality control specifications and test procedures;
8. Optimum dose of medicament required;
9. Packaging, including container, valve and adapter;
10. Dosage hold-back due to adapter;
11. Toxicity;
12. Therapeutic effects;
13. Clinical evaluations including side effects.

A New Drug Application must be filed on all aerosols administered into the oral or nasal cavity such as inhalation and nasal sprays. The particle size will be a function of the depth of treatment. Particles[2] of 3 micra and above are taken out completely by the trachea, the bronchi, the bronchioles and the alveolar ducts. Particles of 1 micron radius and above are taken out by the lungs to the extent of 97 per cent with only 3 per cent recovered on expiration. As the radius of the particle gets smaller, particles of 0.3 micron in radius are absorbed to the extent of only 35 per cent, with 65 per cent recovery on expiration. These conclusions of Findeisen[3] are confirmed by the experimental work of Van Wigh and Patterson[4] who showed that solid particulate material of 0.6 micron in radius was removed to the extent of 63 per cent while particles from 0.6 micron in radius to 2 micra in radius were removed from 63 to 96 per cent. Particles less than 0.4 micron in radius were retained only to the extent of about 30 per cent. All of these data support the view that rebreathing equipment is an unnecessary addition for routine aerosol therapy. With a suitable nebulizer and with the proper technique of making certain that the aerosol is provided for the initial phase of inspiration, excellent therapeutic results have been obtained without rebreathing.

The depth and amount of drug inhaled are also functions of the pressure of the system as well as the particular adapter. One may make reasonable assumptions relative to the physical and chemical stabilities of a new aerosolized medicament based on experience with pharmaceutical chemicals. In any event, these assumptions should be validated by acceptable physical and chemical stability studies. It should be pointed out that the finished aerosols must be assayed for the active principles, many times necessitating the development of new analytical techniques and procedures. Pressures of between 30 and 40 pounds per square inch gauge at 70°F are normally employed. Different pressures and degrees of solvency can be obtained by using combinations of the propellents as indicated below.

*Abstracted from a paper presented at the Canadian Pharmaceutical Association, Windsor, Ontario, April 1959. This is the second part of Mr. Prussin's paper, the first part of which appeared in the preceding issue.

When we consider the lush plum of 1.7 billion dollars which comprise the dollar volume attributable to the ethical pharmaceutical industry in 1957, the total of all drug and pharmaceutical aerosols have made

BRONCHODILATOR AMINE FORMULATIONS

Isoproterenol HCl	0.25%
Water	1.50
Ethanol (absolute)	33.25
Dichlorodifluoromethane (Propellent 12)	65.00
	100.00%

Isoproterenol HCl	0.25%
Water	1.50
Ethanol (absolute)	33.25
Dichlorotetrafluoroethane (Propellent 114)	40.00
Dichlorodifluoromethane (Propellent 12)	25.00
	100.00%

Isoproterenol HCl	0.20%
Water	2.00
Ethanol (absolute)	37.80
Trichloromonofluoromethane (Propellent 11)	30.00
Dichlorodifluoromethane (Propellent 12)	30.00
	100.00%

Epinephrine, U.S.P.	0.25%
3 N solution of hydrochloric acid	0.50
Ascorbic acid	0.15
Water	1.00
Ethanol (absolute)	33.10
Dichlorodifluoromethane (Propellent 12)	25.00
Dichlorotetrafluoroethane (Propellent 114)	40.00
	100.00%

Ephedrine	15.00%
Ethanol 95%	26.00
Dichlorodifluoromethane (Propellent 12)	59.00
	100.00%

Isoproterenol HCl	0.25%
Water	1.50
Ethanol (absolute)	33.25
Dichlorotetrafluoroethane (Propellent 114)	45.50
Dichlorodifluoromethane (Propellent 12)	19.50
	100.00%

CARDIOVASCULAR DRUG FORMULATIONS

Narcotine	1.00%
Water	0.65
Ethanol (absolute)	12.35
Chloroform	20.60
Dichlorodifluoromethane (Propellent 12)	34.80
Dichlorotetrafluoroethane (Propellent 114)	30.60
	100.00%

Nicotine	1.00%
Ethanol 95%	34.00
Dichlorodifluoromethane (Propellent 12)	25.00
Dichlorotetrafluoroethane (Propellent 114)	40.00
	100.00%

Octyl nitrite	0.1%
Ethanol 95%	20.0
Dichlorotetrafluoroethane (Propellent 114)	49.2
Dichlorodifluoromethane (Propellent 12)	30.7
	100.00%

Octyl nitrite	0.1%
Ethanol 95%	9.9
Dichlorotetrafluoroethane (Propellent 114)	55.4
Dichlorodifluoromethane (Propellent 12)	34.6
	100.00%

Octyl nitrite	0.1%
Diethyl ether	14.9
Dichlorotetrafluoroethane (Propellent 114)	45.0
Dichlorodifluoromethane (Propellent 12)	40.0
	100.00%

ANTISPASMOTIC FORMULATION

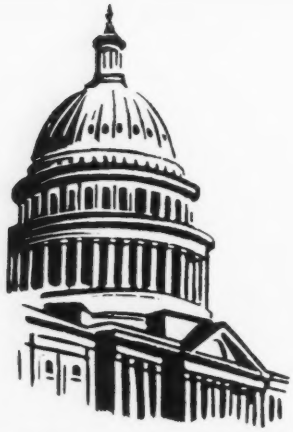
Atropine	0.1%
Ethanol 95%	9.9
Dichlorodifluoromethane (Propellent 12)	45.0
Dichlorotetrafluoroethane (Propellent 114)	45.0
	100.00%

but a slight dent, representing only about 0.5 per cent of the above figure. The total production of aerosol pharmaceuticals was 6.2 million units in 1957, showing a growth of approximately 4 million units from 1956. About 50 pharmaceutical items packaged in aerosol containers are now on the market and many more are in the development stage. Currently these include such products as:[5] inhalants for asthma relief, cold relief and other purposes; burn sprays; topical anesthetics for use in skin planing and dentistry; athlete's foot remedies, poison ivy sprays; spray bandages; and a variety of miscellaneous products including prescription items such as hydrocortisone spray and octyl nitrite inhalant. Topical aerosol anesthetics have been marketed for several years now, but topical antiseptics and antibiotics are still in their infancy as push button products. If an average retail price of $1.50 is assumed, the retail volume for aerosol pharmaceuticals in 1957 amounted to about 9.3 million dollars. This figure represents about 5 per cent of the total dollar volume for drugs and pharmaceutical items (excluding prescription items) of the types which might be packaged as aerosols.

In the allergic field alone the allergic population of the United States consists of approximately 16 million individuals. It is estimated that 2 to 3 million people suffer from bronchial asthma. The National Physicians Advisory Panel indicated that in September 1957, which would be a "high month" because

(*Continued on page 812*)

COURTESY CHAS. PFIZER & CO.



FDA NEW DRUG REQUIREMENTS

BY RALPH G. SMITH, M.D. CHIEF, NEW DRUG BRANCH, FOOD AND DRUG ADMINISTRATION, U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE, WASHINGTON, D.C.

The Federal Food, Drug and Cosmetic Act of 1938 states that a new drug cannot be introduced into interstate commerce until an application for it becomes effective. Although this applies to most drugs, two groups of drugs are exempt from this requirement. One such group is that of five antibiotics and their derivatives, each batch of which must be certified for safety and efficacy before it is marketed. The second group which is exempted consists of several biological preparations such as toxins, antitoxins, vaccines and certain blood products which are subject to license control by the Public Health Service.

There is also an exemption under the Act for the shipping of a new drug for the purpose of investigation before an application for it is effective. This procedure involves certain conditions, including the label statement "Caution: New drug—limited by Federal Law to investigational use" and a signed statement by the investigator to the effect that he has facilities for investigation and will use the drug only for that purpose.

In general terms a new drug is defined as one which is not generally recognized as safe, when used as directed in its labeling, by experts qualified by scientific training and experience to evaluate the safety of drugs. It is pointed out by regulation that a product may be a new drug not only on account of its active ingredient but also due to any new solvent, excipient, coating, or other component. A combination of two old drugs may be a new drug, or even a combination of drugs of recognized safety may be made a new drug by a change in the proportion of its ingredients. A drug which is recognized as safe for the treatment or prevention of a certain disease may become a new drug when recommended for use in another disase or for its effect on another structure or function of the body. Also a drug may acquire newness by a change in dosage or in method or duration of administration from those generally recognized as safe.

It must be recognized that although these conditions *may* cause a product to be a new drug they do not necessarily do so. In each instance a decision must be reached on the basis of whether or not there is a reasonable question of safety. Considerable time and thought is expended in forming opinions which we offer in this connection to pharmaceutical firms on their inquiry. Occasionally differences of opinion exist betwen the manufacturer and the Food and Drug Administration which are usually resolved by correspondence or discussion.

It is also stated in a second part of the definition of a new drug that it continues to be a new drug even after it has been shown to be safe by investigations. As a matter of fact, marketing experience shows that some drugs are not as safe as predicted on the basis of investigative studies. This new drug status holds until it has been used to a material extent or for a material time under the conditions of use which have been provided for in an application. This means that even if one firm holds an effective application for a drug and has it in distribution, other firms must obtain their own effective applications before marketing the same drug as long as it has new drug status. Here, again, differences of opinion may arise as to whether or not a drug has been used to a sufficient extent or for a sufficient time to justify its removal from the category of new drugs. Decisions with respect to whether a new product is initially a new drug as defined in the Act and with respect to when

*Presented at a symposium sponsored by the Albert Einstein Medical Center, Philadelphia, Pennsylvania, on "The Clinical Evaluation of New Drugs," April 1959.

it ceases to be a new drug are of considerable importance to drug manufacturers. The necessity of submitting a new drug application involves time and expense. We do not have the authority to dictate such decisions. If such cannot be reached by mutual agreement the question can be answered in a Federal court.

I would now like to turn attention to the types of information required in an application.

Probably the most important part of the application and that which represents the greatest effort in preparation is the first section which consists of reports of investigations that have been made to show whether or not the drug is safe for use. The section includes data obtained by studies on both animal and human subjects.

A dogmatic statement cannot be made of the requirements with respect to animal toxicity studies since such will vary with the drug and the nature of its use. A useful guide in this connection was a publication by members of our Division of Pharmacology in the October 1955 issue of the Food Drug Cosmetic Law Journal. Most pharmaceutical firms are familiar with this paper. It has recently been revised and published in book form by the Association of Food and Drug Officials of the United States. Copies may be obtained for $2.00 from the Association's Secretary, Mr. J. S. Lakey, Texas State Department of Health, Austin, Texas. Its title is "Appraisal of the Safety of Chemicals in Foods, Drugs, and Cosmetics."

In a general way we are interested in acute toxicity studies (LD 50's) in two or three species by oral and intravenous administration. It may not be feasible to obtain an LD 50 in dogs but an approximation of the acute tolerance or lethal dose should be obtained. The required duration of subacute or chronic toxicity experiments will depend on the probable duration of the clinical use of the drug. Two or three weeks may suffice for a drug which is used once or for a day or two, 2 or 3 months for one which may be used for a week or so and 6 months to a year for a drug which is used to treat chronic conditions. The drug is usually given in the food. If the product is an injectable, a toxicity study should be conducted for an appropriate period by the route of administration to be used clinically. Two species of animals, one of which is a non-rodent, should be used in the subacute and chronic experiments. Rats and dogs are usually chosen for this purpose. Three dosage levels plus a control group are indicated. The lowest dose should be at a high therapeutic level and the highest at a level which will produce toxic effects. Blood and urine studies should be conducted at intervals and when the animals are sacrificed the organs should be examined for gross pathology and histopathology.

Various types of drugs require various methods of study. Techniques have been designed for topical preparations which test for potentialities of primary irritation, sensitization, and systemic effects from absorption through the skin. A study of the local irritating effects of injectables is indicated.

We are also interested in reports of investigations on the pharmacological action of the drug and of its metabolism. Such reports are not as directly concerned with safety as those on toxicity. They do, however, have a bearing on this point in that they define the tisues on which the drug has its primary action and suggest what side effects might result from overdosage or whether problems of cumulation may arise.

In a review of the clinical reports in applications we are often confronted with the necessity of making difficult decisions on their adequacy to demonstrate the safety of the product. In most instances this could be avoided by an understanding of the requirements. It is stated on the application form that reports of all clinical tests ordinarily should include detailed information pertaining to each individual treated, including age, sex, conditions treated, dosage, frequency of administration, duration of administration of the drug, results of clinical and laboratory examinations made, and a full statement of any adverse effects and therapeutic results observed.

The deficiency of a report may be one of inadequate investigation but probably as frequently it is one of inadequate recording. Careless or sketchy reports of work which may or may not be well done are not unusual. These vary all the way from those which omit only one detail of interest down to the testimonial: "I've used this drug with successful results on many patients. You should get it on the market as soon as possible." In some instances the dose is omitted. No information may be furnished on the duration or intervals of administration. The statement: "Laboratory examinations negative" may mean anything. "There were no side effects." Were any looked for and if so what? Was the patient questioned or examined? The pharmaceutical firm cannot use such reports as a guide line for safe labeling and they are similarly inadequate from the standpoint of our evaluation.

Applicants cannot provide adequate reports in an application if they do not get them. It is recognized that in many instances they are difficult to obtain from busy investigators even though they are quite willing to do the work on which to base them. Frequently reports can be facilitated by the use of case report forms supplied by the applicant which cover as completely as possible the desired information. A form should be prepared carefully to apply to the individual drug since the necessary information will vary with the drug and with the type of study to which it is subjected. The investigator can often assist the representative of the drug firm in preparation of such a form. This is particularly true when the firm lacks a medical staff or has had little experience in drug investigation.

We like to have reports from several competent

investigators. It is our experience that the results and impression of one investigator may differ from those of another. When we receive the report of an extensive study from one man, which report do we have? Is it from the enthusiast or the ultra-conservative? Clinical studies with controls are received all too infrequently. Such experiments are useful in an evaluation not only of efficacy but of safety and side effects. You are undoubtedly familiar with the adverse actions reported for placebos in some of these controlled studies. The animal toxicity experiments on certain drugs may suggest special clinical studies. Liver function tests or kidney function tests may be indicated. Experience with known drugs of similar chemical structure may likewise indicate certain investigations. I am sure that we would be interested in reports of liver function studies on any phenothiazine derivative. All investigators may not have the facilities or experience to conduct special studies but many do and such studies should be conducted when indicated and when possible. The choice of the investigator is important. A report on a remedy for diabetes from a specialist in that field carries more weight than one from a cardiologist. A dermatologist is usually better trained to evaluate a topical preparation than is a general practitioner. These considerations may be obvious to you but all too frequently they are not heeded by applicants.

The value of the testimonial type of report has just been minimized. This should be distinguished from a general appraisal of the drug by the investigator when accompanied by adequate case reports. Such an appraisal is valuable. It may constitute an evaluation of the drug by the investigator in the light of his broad experience with drugs of a similar type or those used for the same type of therapy. It does help us in reaching our decisions.

The second section of the application form requires a complete listing of the components of the drug. This includes not only the ingredients of the final product but all substances used in the synthesis or other method of preparation of the new drug. This may alert us to the possibility of contamination of the final product with such components. It may suggest the necessity of control procedures or specifications to insure their absence from the final product or their presence only in a limited concentration. Of course, the application must also include a statement of the complete quantitative composition of the product including all inactive ingredients.

Another section of the application, which is reviewed by our staff of chemists, consists of a full description of the methods, facilities and controls used in the manufacture, processing and packing of the drug. This entails considerable detailed description. It is considered as an important part of a new drug application although the results which it achieves may be largely taken for granted by the physician who prescribes the product. Such procedures and controls are necessary in establishing the safety of a drug. They offer assurance that the product marketed will meet adequate and uniform standards. I have no statistics to offer but it is my impression that faulty manufacturing procedures or a breaking of the controls which have been accepted have caused trouble with new drugs on the market as frequently as inadequate animal and clinical investigation or faulty labeling.

Another necessary part of the application is the labeling. This includes the container labels, the package circular if one is used or required and/or a brochure. If the drug is proposed for over-the-counter distribution (without prescription) the labeling should include adequate directions for use by the layman. If it is a drug restricted to prescription use, as is most often the case, the labeling should contain adequate information for use of the drug by physicians. This includes not only indications for use and dosage directions but also a description of side effects, possible adverse reactions, precautions and contraindications if such are applicable. It is expected that the labeling will be prepared on the basis of the results of animal and particularly clinical investigation.

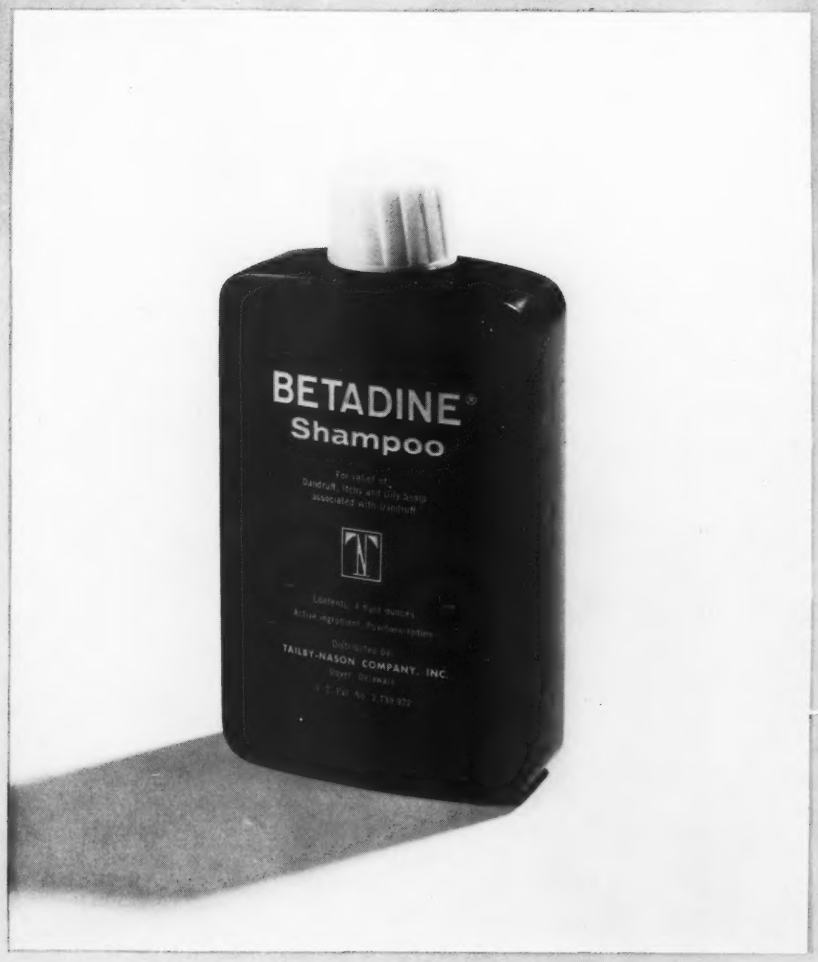
The safety of the drug is evaluated and action is taken on the application in view of the conditions prescribed, recommended, or suggested in the labeling. We must decide whether the drug is safe if it is used as directed and provided that the physician has all the information furnished in the labeling. A decision must be made with the recognition that safety is relative. No drug is entirely safe. There are a number of drugs on the market which involve a definite hazard in their use. In this connection consideration is given to the value of the drug as a therapeutic agent. If it is an agent which is life-saving or if it is palliative in a serious condition for which there is no effective remedy, some degree of hazard can be tolerated, certainly to an extent which would not be acceptable for a drug useful in controlling simple headache or for a cathartic. Between these situations there is a broad field with gradations of necessity and safety. In each case, however, it is our policy to require a brochure which gives the whole picture.

Before using a new drug the physician should obtain as complete information on it as possible. The brochure is available and usually presents a more nearly complete story than most of the promotional literature which floods the mails. Respect should be given to the dosage which is recommended. This is based on the experience of the investigators who helped to develop the drug. It is the dosage which has been shown to be safe in an application which has been allowed to become effective. If the physician exceeds it, he is, himself, in the field of investigation.

When an application for a drug is allowed to be-

(*Continued on page 813*)

Packaging and Selling



Betadine, Tailby-Nason Company's
new antiseptic shampoo, packaged in a chocolate brown, flat polyethylene squeeze bottle by the Plax Corporation with yellow, molded plastic closure by Armstrong Cork Company, for easy handling and storage. Lettering is also yellow.

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Pacific Division: Russ Building, San Francisco
Canadian Division: 5595 Pare St., Montreal, Que.

KEEPING PACKAGE PRODUCTION OUT OF TROUBLE

BY C. F. SCHNEIDER REXALL DRUG AND CHEMICAL COMPANY

Production people experience many moments of real anguish in trying to put together packages, for they come at the last stage in the progression of a new product or new merchandising program from the research laboratory to the shipping dock. The research, merchandising, advertising, purchasing and sales departments have finished with their portions of a job before it gets to production. Along the way they may each have missed their individual deadlines by only a few days. This lost time, which accumulates to something sizeable, is inherited by the production department, which must make it up if the program is to be concluded on the date originally scheduled.

I don't suppose an airtight system ever will be devised to overcome things of this sort. Even with something so relatively simple as putting up a bottle of aspirin tablets, there are so many things that can go wrong that, to cover every single eventuality, to insure that nothing can possibly go wrong, is a practical impossibility. When you stop to think about it, an aspirin package usually consists of a bottle, a cap, a label—or maybe two, a carton, shelf pack and shipping container—or three. Forgetting the extra labels and shippers, that is six parts to the package. Then there are the specific characteristics of each part. They all have a style, a size, the material from which they are made, some kind of printing or other appearance factor and must be packed in a certain way to arrive at your plant in usable condition. That's five characteristics for each part. Six parts, each with five characteristics, makes 30 different factors that someone somewhere along the line must take into consideration. Then, there are usually two or three sizes of any one product. So, someone has to be concerned with 60 to 90 separate details of the packaging for only one product. There is also a similar number of considerations in the manufacturing of the product itself and in the operational end of the packaging. The bulk of my experience has been in the field of package development, and I want you to know that the control which can assure against the bulk of difficulties is possible. The key to such control lies in organizing the packaging responsibilities.

Lack of control can wreck a schedule entirely, as

it did for a large pharmaceutical manufacturer who was producing a new troche. After all the other steps had been taken with some difficulties along the line, it was found that the capping plugs wouldn't go all the way down onto the lip of the vial. They went in only so far and then hit the stack of troches. So, after all the preparation mess, some stupid little detail wrecked all the extra hours of work that had gone into the project. Then the fur really did fly. The company had the expense of replacing the vials, and the schedule was wrecked because it took three weeks to get a proper size vial.

Someone had forgotten, or had never ascertained the fact that, at that time, glass vials had length tolerances of plus or minus 2 mm. Also, in compressing the troches there was a thickness tolerance. What had happened was that they were trying to package maximum thickness troches in a minimum length vial.

From beginning to end this project was handled incorrectly. The advertising department was planning the package without consulting production. Purchasing, although they did a good job in working out the specifications of the vial, didn't go far enough. The research people didn't inform the production people or purchasing about allowing for tolerances in troche thickness, although this is something the production department should have thought about too. Also, the production department might have averted some of the turmoil they had to go through by digging for more marketing information. Here are some of these hundreds of little details that everyone assumes someone else is taking care of in an "unorganization" like this one was.

In a well-functioning operation things like this "troche-trouble" should not happen, or at least not

*Presented at the Pharmaceutical Manufacturers' Association, Western Regional meeting, Los Angeles, February 1959.

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often. In my opinion, two principles are involved in keeping out of trouble in developing packaging programs. One lies in keeping everyone who is to play a vital part informed of what is going on from beginning to end of the development of a new product—or in the maintainance of the marketing of existing products. "Everyone" includes the production department. Since actually running a product is the last thing that is done, other departments all too often feel that production doesn't have to know what is coming until well along in any planning phase of a marketing program.

This may have been true when women sitting around tables put together most packages that came down the pike. It certainly is not true in this day and age of complex machinery and high machine speeds.

When a new product is in the laboratories, the production people should know about it. When the sales department is thinking up a new packaging twist for an old prdouct, the production department should know about it. When purchasing in certain circumstances is forced to accept a package part that is even minutely different than normal, production should know about it. Production should know about these things at their inception—not when the research or sales or purchasing people believe it is time to tell production. The production people themselves should be allowed to decide at what stage of a program they should jump into it. They know all the factors involved in their own business better than research or sales or any other group, including management. By the same token, the other departments should also have the opportunity of integrating their parts into the whole program to the best of their own knowledge.

Any project should be a joint venture of all departments of a company, cooperating wholeheartedly. Each particular phase is not something to be jealously guarded by any one department until it is completely ready to pass the thing along to the next one involved.

The second principle is to organize the various phases of a packaging program in a logical manner so that it will flow smoothly from beginning to end. A definite system should be set up in every company that packages goods, no matter how small or how large the company is. Also, once it is set up, the system should be religiously followed. The system may be modified as you go along in it. But once you start to stray and by-pass procedures you are on your way back to cross-currents and malfunctioning.

There are undoubtedly many methods but there are basic concepts, which can be varied to suit conditions in differing types of organizations. Obviously a firm that markets only a few products wouldn't find it as important in their over-all scheme of things to assign as many people or expend as much money in this field as one that has a large number of products. But regardless of size, there should be some one person, or group, or committee through whom all the information concerning packaging should be channeled. This person should be held responsible for any difficulties that may arise in the handling of a product from the specifying of the materials through the delivery of the materials and their running on the production line to their ultimate delivery to a warehouse or retail store.

For the smaller firms, the solution can be as simple as having one person assigned to a liaison position. As soon as a project is initiated this person should be informed. The project can come from any department. Generally programs are started by the merchandising groups. They have more occasion to require packaging changes or new developments than any other department. It is entirely possible that production can start projects, however. They may find a piece of equipment, for example, that will save half of the labor cost on a particular job, but which requires a change in a package; the merchandising people should have an opportunity to judge whether the change will affect the sales of the product.

On being informed of a new project, the liaison would be responsible for seeing that all other departments are in turn aware of the project and what part each is expected to play in its development. Each department should also be told how soon it is supposed to have a part in the project completed, or asked how soon it can be ready with its part. As a program proceeds through development, all departments should be kept up to date with its progress by means of regular reports.

This informing can be done by memos or meetings, or both. As soon as a department indicates that they wish a project started, the liaison person can issue a memorandum to research, sales, advertising, purchasing, production and management. I'm assuming that inventory control and scheduling are parts of the above major departments. If not, they should also receive this initial memorandum, which should include all the pertinent data. First of all, what in general the project is all about. Then, details such as when it is hoped to be under way, time schedules, quantities involved and what each de-

(*Continued on page 822*)

Colonial

CELLOPHANE PACKAGING

adds

SPARKLE

Diamond bright! This best describes the sparkling appearance of Colonial's cellophane package, the wrapper that makes an eye-appealing container for our quality dropper and assembly units.

Glistening Colonial packages are available in other materials too, such as glassine, foils and the Polymer-coated films. Individual wrapping problems are taken in stride.

Let our technicians make free samples to your exact specifications. We have a Special Services Department that will provide precision calibration in silk screening and hot stamping, too. Contact a Colonial representative listed below or write to us directly.

Specialists in Glass or Plastic Droppers and Assemblies for Nearly a Quarter of a Century

Represented by:

CHARLES E. SCHWAB
122 E. 42 St.
New York 17, N. Y.
OXford 7-0760

ALLEN J. GRETSCH
327 S. LaSalle St.
Chicago 4, Ill.
WAbash 2-1619

HARRY M. GRABER
811 S. 53rd St.
Philadelphia, Pa.
GRanite 6-6311

GABLER & GABLER
435 S. LaCienega Blvd.
Los Angeles 48, Cal.
BRadshaw 2-2995

RICHARDS GLASS COMPANY
102 Atlantic Ave.
Toronto 3, Canada
LEnox 2-3311

COLONIAL APPLICATOR CO.

VINELAND, NEW JERSEY

Packaging and Selling

The evidence is accumulating that much of the friction between the buyers of advertising space and publications over position has been a tempest in a tea pot or something worse. For instance, all this fuss and furor that has been going on for years about a right or a left page.

Dr. Daniel Starch, famous for the Starch Studies, has just published in Media/Scope an analysis of 12 million inquiries that were pulled by 8,200 advertisements in national magazines.

(1) Right- or left-hand page. It makes no difference insofar as inquiries are concerned. It does not make the slightest difference whether it is a right- or left-hand page. This would sort of indicate to us that an awful lot of buyers of advertising space have been wasting an awful lot of energy in past years.

(2) Position. There are only small advantages to being in the front or the back of a magazine. In fact, there is no recommendation by this study for either one because of the variation in editorial content and spacing in a magazine. In recent years editors have distributed reading matter so evenly through the issue that there is basically no choice.

(3) Response to advertising. Contrary to some opinion, the advent of television as a major factor in advertising has not affected inquiry responsiveness of magazine readers. Inquiries per million circulation have remained at about the same level since Dr. Starch's "Analysis of 5 Million Inquiries" in 1930.

(4) Color. Color is worth the investment, in that 4-color advertisements bring approximately 50 per cent more inquiries than do black-and-white.

(5) Size. Large advertisements bring more inquiries than small, but not in direct proportion to size.

(6) Thickness of issue. Until a magazine reaches 200 pages or more the competitive thickness of an issue is moderate. For issues that are larger, the decline in inquiries becomes rapid as the number of pages increases.

(7) Seasons. The big months for inquiries are February and September, the low points, June and December.

A statement surprising, at least to us, was recently published in *France Actuelle*, a publication printed in English which details the commercial progress of France.

More than in any other modern nation of high standards, Frenchwomen are taking an important part in business and industry. In addition, Frenchwomen are progressively breaking down barriers to work in different fields and professions. For instance, in a recent examination more women than men passed the examination for Justice of the Peace.

According to latest statistics, 34.6 per cent of the women of France—not including those engaged in agricultural activities—have paid employment outside their homes. This compares with 33.7 per cent in the United States, 31.7 per cent in the United Kingdom and 24.9 per cent in Belgium.

This emphasizes the recent statement that the most disastrous thing that could happen to the economy in the United States or a modern nation would be to have the wage-earning woman suddenly decide to stay home.

We rambled on at some length in the last issue about the origin of the white lipstick. As we said there, and as the story was told us, this originated with a small American company who received an order from Italy for a chocolate lipstick. Inquiry as to the reason for this rather extraordinary color request brought out the information that Italian women were blending the lipsticks on their lips rather than purchasing one lipstick, and that the chocolate shade lent itself nicely to blending. After some deep thought along this line, the American company came up with a white lipstick.

We have had some rather lurid comments on this story of the origin of this lipstick's species. We shudder with the anticipation that there will be even more. However, we do feel that we should give another theory as to the white lipstick's origin.

It seems that another small American company, whose business is largely conducted from a salon in New York City patronized by a discriminating clientele, had been maintaining for some years a window display of lipsticks showing a wide range of colors and shades.

Undoubtedly, intent upon other important matters, this company did not change the window display over a period of several months or more. During this period the bright sunlight substantially bleached the colors in a number of these window display lipsticks.

After a lapse of considerable time, during which these lipsticks had undergone a color change from vivid shades to very much paler ones, the company noticed that some of their clientele were demanding lipsticks from the window, and that quite a repeat business was being built up for faded lipsticks. Investigation again proved that a great new social change is taking place in America and that we are on the dawn of a new era of lipstick blending by American women.

We offer these two stories of the origin of the white

you have to
manufacture
Quality
into a
product
At Newman-Green we believe in the axiom of all true craftsmen. Quality cannot be inspected into a piece—it has to be built into the piece.
The aerosol manufacturing and sales policy based on product quality, service and honesty will always provide you with the best buy. This is just as true on the smallest orders as it is on the largest orders. Newman-Green customers are assured of this fine craftsmanship because our first concern is to provide you with the best product quality possible for the money spent. Call your Newman-Green representative today.

NEWMAN-GREEN, INC. *Creative Aerosol Valve Engineering*

151 Interstate Road, Addison, Illinois
Cable Address: NEWGREENCO, Addison, Illinois

lipstick as two that were told us with eminent good faith. We felt they should be recorded somewhere for the future archives of American cosmetic history.

The American Institute of Management has just certified the American Home Products Corp. and Bristol-Myers Co. as "excellently managed" in the year 1958.

Glass Containers 1958 is the name of a compact, useful booklet published by the Glass Container Manufacturers Institute Inc., 99 Park Avenue, New York 16, N. Y.

According to this book, the packaging industry is now the nation's 9th largest. About $10,500,000,000 was spent in 1958 for more than 600 billion packages.

Here is the way the package products are divided:

Paper and fibre containers	$4,376,000,000
Metal containers (including aluminum)	2,272,000,000
Glass containers	822,000,000
Plastic packaging (including films)	590,000,000
Wooden containers	426,000,000
Textile packaging	204,000,000

Since 1930 most glass containers have shed a third of their weight and a further slimming of 20 per cent has already been predicted for many styles of glass containers in the near future—making lighter and even stronger glass containers no longer a matter of conjecture.

During 1958, shipments of glass containers for drug and cosmetic products reached 33,526,000 gross, or 4,827,744,000 units, or 24.0 per cent of domestic glass container shipments.

Of these glass containers in our particular industry, 20,730,000 are used by medicinal and drug manufacturers and 12,796,000 by cosmetic and toiletry manufacturers.

The Seattle Times has just issued the 1959 Consumer Analysis. This is the 12th annual survey of the Seattle market. It contains the market status for toiletries.

It is getting pretty difficult even to invent a word for a trademark much less take one out of the dictionary. This was made pretty clear recently in a Federal Court of Appeals which ruled that the Pfizer trademark Bonamine infringes on Searle's Dramamine.

According to the Court: "Dramamine and Bonamine contain the same number of syllables. They have the same stress pattern, with primary accent on the first syllable and secondary accent on the third; the last two syllables are identical.

"The initial sounds of Dramamine and Bonamine are both what are known as 'voiced plosives' and are acoustically similar. The consonants 'm' and 'n' are nasal sounds and are acoustically similar. The only dissimilar sound in the two trademarks is the 'r' in Dramamine.

"Slight differences in the sound of similar trademarks will not protect the infringer."

As the birth rate of new products multiplies, so also does the frenquency of market testing before very much capital is put behind the new product.

According to a firm specializing in market testing, Syracuse has been the most popular city for this purpose, with Columbus, Ohio a close second in total tests, and number one for drugstore audits.

Here are the cities most frequently used in market testing: Syracuse; Columbus, Ohio; Providence; Grand Rapids; Indianapolis; Rochester; Buffalo; Cleveland; Fort Wayne; Kansas City, Mo.; St. Louis; Sacramento; Wichita and Harrisburg.

Following these as favorites are: Albany, N. Y.; Binghamton; Boston; Dayton; Los Angeles; Peoria; Philadelphia; Portland, Ore.; San Diego; Toledo; Detroit; Oklahoma City and Omaha.

We have heard very little in this country in the last several years about consumer associations. In Canada, however, the Canadian Association of Consumers is becoming aggressively active.

At the last meeting there was a strong stand taken against 'wasteful promotional advertising, including premiums, coupons and other abuses which we have long opposed." Among some of the special resolutions presented at the meeting was one opposing the inclusion of "useless toys" in cereals. The resolution said: "Whereas these toys are a temptation to children to ask mother to buy said product even when they do not want to eat it," and then went on record as "favoring the omission of useless trinkets in various products and a reduction in price accordingly."

Soap manufacturers were asked to "discontinue premiums in the larger sized boxes of soap or detergents, increase the soap content and clearly state the savings involved in purchasing the larger size."

If consumer associations in this country decide to take a similar course, they may have some trouble in deciding just where to begin.

An important test will soon be made by the Safeway Stores in the 37-unit San Diego division, starting early in May. This division will make a careful comparative check between the two ways of merchandising nonfoods, particularly health and beauty products, that is, direct buying and store servicing versus rack jobber buying and servicing.

Previously Safeway in this division had acquired all health and beauty aids from a leading rack jobber. Now the company will set up a separate department to be staffed by a buyer, department supervisors and service personnel.

During this initial test period, the department will

be staffed with one supervisor, although as volume grows others will be added. These supervisors will visit the stores and maintain liaison just as this is done in the food departments of the store. All purchasing during this period will be on a direct basis.

The Pot is still boiling on the issue of private brands versus manufacturers' brands. According to president Henry Abt of the Brand Name Foundation, the continued growth of private labeling could, in time, prove "disasterous" to the very stores that promote their own brands.

Mr. Abt contends that, "No private label, past or present, has ever pioneered a new product or improved an existent one. No private label has developed a market." He further added, "Few private labels, charged with the costs of research, warehousing or market development could sell at their present price tickets. In a word, for the most part they ride the coat tails, travel the well-blazed path of makers' brands."

The *Progressive Grocer* has just made a study of private label brands in the food field where the private label is finding the most fertile conditions for expansion.

According to this magazine, A & P is doing over 20 per cent of its $5 billion volume with its own labels. Safeway is doing 10 per cent. Sears, Roebuck, with nearly $4 billion sales, did 98 per cent of its business in store brands.

This magazine also believes that, while national brands are dominant in drugstores, other stores with their own labels such as discount houses, grocery stores and variety stores were becoming serious competitors for drug items to the drugstore.

In an investigation among wholesale grocers the *Progressive Grocer* found that 62.2 per cent believe that there would be an increase in private brand sales relative to national brands.

What strikes us about a great deal of this uproar is that nobody, particularly the brand name manufacturers, have really gotten down to brass tacks in an objective analysis as to why private labels are growing in sales relative to the brands of the national manufacturers.

Is it because distribution costs have grown so enormously in the last 15 years and have added so substantially to the cost of goods at the point of sale?

Is it because of wide-spread retail resentment at the way retailers have been pushed around by the manufacturers with multi-million dollar advertising campaigns?

Is it because so much money is going into advertising and distribution that product quality has had to be pushed down to the mean level that will get by with consumer taste and, for this reason, the retailer feels that he will have no difficulty in matching the quality of many advertised products?

Is it because a large number of manufacturers of heavily advertised brands are perfectly willing to go around the corner and package an equal or better quality for a retailer under his own private label and at a price that permits the retailer to out-sell the manufacturer's own brand?

Is it because retailers are convinced there is a substantial decline in brand loyalty, a growing indifference to a great deal of advertising; or is it because retailers are discovering their own potent and nearly absolute control of sales at the point of sale within their own store?

New research by *Life Magazine* from the so-called Life Marketing Laboratory, states that, when women change after a few months from one brand of deodorant to another, the reason is probably that they think they build up an immunity to any one brand in using it for several months.

In order to create an "atmosphere of sophistication, femininity and distinctive style for its ads," Max Factor, now celebrating its 50th anniversary, has had a new type face created. This type face will be exclusive to Max Factor for this year's advertising and later will become generally available.

The scent of sweet cured wood-smoked meat will be part of the advertising of Carl Buddig & Co. advertising this spring.

Oil of cloves, oil of cassia and maple syrup will be mixed with the ink to produce this odor for the advertising of its smoked sliced beef.

As the big advertisers turn more and more to their problems at the point of sale, a flood of new plans for retail support are in the making.

As one leading manufacturer remarked, "When you are spending a lot of money on advertising, your product must not be merely available in retail outlets, but it has to be visible so that people can easily see it."

Weco Products has a new idea for achieving this visibility. At least this idea has the merit of simplicity. The company's new plan is to give away $6 worth of goods to 25,000 drug stores. This give-away will be done by the wholesale salesmen who will turn an explanatory letter over to the druggist.

The letter to the druggist from the wholesale house states: "Weco Products has undertaken to advertise its new products, but what it needs is distribution and point-of-sale display to justify its expenditures. Its approach to your problem and ours is unique in that it has asked us to give—no strings attached—a small quantity of each of these items to you. Our request is very simple. Put these products on display, promote them to whatever extent you can, and when a reorder is indicated, please place it with us."

What could be sweeter!

Colorful "special effects"...

or golden metalized...

Owens-Illinois Closures add to the sales appeal of your package

Lovely closures such as these help to make your salespackage a standout on shelf or counter... express its quality and compel sales action.

Owens-Illinois closures add beauty, but of equal importance is their durability and resistance to most chemicals . . . providing the ideal closure for almost any product.

Plastic and metal closures are but one part of the Owens-Illinois Complete Packaging Approach . . . the right container, attractive label design, special fitments, and merchandising carton.

Ask your Owens-Illinois representative for complete details on closures or any part of the packaging service.

METAL AND PLASTIC CLOSURES
AN (I) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES · TOLEDO 1, OHIO

THE CASE FOR

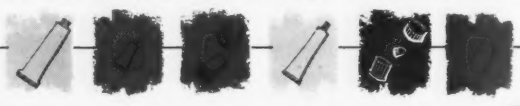
NEW PLASTIC CONTAINERS BY WIRZ...

FOR COSMETICS • PHARMACEUTICALS • HOUSEHOLD AND INDUSTRIAL PRODUCTS

Lightweight, durable and conveniently flexible for easy dispensing . . . a handsomely styled new plastic container by Wirz can give an added dimension of sales appeal to your product. Container color, size, shape and decoration can match virtually any design idea. And Wirz specialists are prepared to work with you at every stage of container design.

Let a Wirz representative show you his case for new plastic containers by Wirz. Then discuss with him their many advantages for inventive–and profitable–merchandising of your products.

Another Development by America's Leading Producer of Collapsible Metal Tubes



A. H. **WIRZ** *Inc.*

2308 W. TOWNSEND STREET, CHESTER, PA.
ALSO RIGID CANS & IMPACT EXTRUSIONS—AMERICAN EXTRUSION DIVISION
NEW YORK • CHICAGO • LOS ANGELES • MEMPHIS • HAVANA

The Marketing Division of *American Weekly* has just issued a comprehensive report on 300 leading rack jobbers. This report covers such things as the name and address of the rack jobber, the particular kind and type of store served and the lines which these jobbers carry.

Bristol-Myers has just changed the advertising agency for Ban. What this means is not for outside guessing because, on the record, Ban has been one of the recent spectacular successes in the cosmetic industry. Annual sale for Ban is now estimated to exceed $5 million and certainly Ban is the largest selling deodorant on a dollar basis.

Ban's success was made in a difficult market of at least 50 competing brands and the usual struggle to jump on the band wagon which brought 20 or more competitors in the roll-on type of stick.

Ban's success was not exactly a windfall; the company has reported some of the trials and tribulations of its introduction. It took 480 combinations of plastics before the right one was found and several test campaigns had to be cut short and the product withdrawn.

Today, probably Bristol-Myers could be called the deodorant king with from 25 per cent to 30 per cent of the total market—with Mum, Mum Mist, Ban and Trig, all Bristol-Myers' brands, and all active in this particular market.

In a recent study of the fragrance market, Lentheric found, to quote: "A woman's reasons for using perfume unquestionably include sex appeal, but they also encompass many other aspects of her life. A woman's reasons for using perfume were (1) the psychological—to give her spirits a lift; (2) the emotional—to make her nice to be near and (3) the fashionable—to complement and accent the different demands of her wardrobe."

Vick products are manufacturerd today in 25 countries; 85 per cent of overseas sales comes from direct manufacture abroad.

During the first six months of 1958 the Food Fair Stores of Michigan sold $841,253 worth of health and beauty aids through the 27 units it had at that time. Roughly, close to 2.5 per cent of its total business was derived from the sales of health and beauty items.

This is a remarkable figure in view of the fact that the average drug section in this chain contains 284 items compared to the national average of 335 items carried by supermarkets. Food Fair's merchandising premise is based upon carrying fast-moving items within necessary lines.

This information was taken from a comprehensive analysis and report in the trade publication, *Super Market Merchandising*, using this particular chain as a basis for a detailed sales analysis.

Of the 284 items in this department, 103 items did 66 per cent of total sales. Each of these items sold more than $4.00 weekly per store.

Since this makes an extremely interesting and authoritative picture of the way in which the supermarket has penetrated into both branches in this trade, we reprint here from Super Market Merchandising each of the 103 products that did over $4.00 a week in each of these 27 typical supermarket stores.

Colg. T. Paste/Gt.
Similac Liquid
Woodbury Shampoo Deal
Solo Bob Pin Deal
Colg. T. Paste/Econ.
Brylcreem
Ipana Plus
Gleem T. Paste/Lg.
Pepto Bismol/8 oz.
Stripe T. Paste/Econ.
Waldorf Shampoo
Alka Seltzer/Med.
Listerine Antiseptic/14 oz.
Gleem T. Paste/Econ.
Super Dent/Deluxe
Iodent
Listerine T. Past/Deluxe
Colg. Paste/Fam.
Anacin/100's
Adorn Hair Spray/7 oz.
Bufferin/36's
Arrid Deod. Whirl In
Crest T. Paste/Lg.
Halo/Lg.
Band-Aid Sheer Patch
Pepso. T. Paste/Econ.
Pepso. T. Paste/Gt.
Bayer Aspirin/100's
Anacin/50's
Gleem Paste/Fam.
Revlon Living Curl/7 oz.
Ban Deod.
Pace/Reg.
JJ Baby Shampoo
Enden Cream Shampoo
Q Tips/Sm.
Bufferin/60's
JJ Baby Powder/Lg.
Band-Aid Sheer Strips
Wildroot Cream Bomb
Sta Set Hair Spray
Dextro Maltose
Gillette Blades/20's
Ipana T. Paste/Gt.
Pace/Super
Ipana T. Paste/Econ.
Halo/Gt.
Noxzema Skin Cr./6 oz.
Listerine Antiseptic/7 oz.
Noxzema Skin Cr./2½ oz.
Band-Aid Plastic/Md.
Breck Banish Shampoo
Satin Set/Lg.
HC Suave Hair Dressing
Crest T. Paste/Econ.
Toni/Reg.
Vitalis/Md.
St. Joseph Baby Aspirin
Satin Set
Polident T. Powder
Breck Normal Shampoo/4 oz.
Satin Set Fine Hair/5¼ oz.
Prell Liquid/Lg.
Paneco Aspirin/250
Bufferin/100's
Alka Seltzer
First Aid Kit
Paquins Hand Dry Cr.
Q Tips (baby)/Lg.
Breck Dry Shampoo/4 oz.
Breck Creme Rinse
Vaseline Jelly/Gt.
Vicks Vaporub/Sm.
5 Day Deod. Deal
Colg. Paste Bomb
Pace/Gentle
Lavoris Antiseptics/Md.
Wildroot Cream/Med.
Pepto Bismol/4 oz.
Breck Normal/8 oz.
Bromo Seltzer/Lg.
Fresh Deodorant Stick
Gillette Blades/10's
Top Brass
Gillette Blades Thin/10's
Jergens Lotion/Lg.
Vaseline Hair Tonic/Lg.
Paquins Hand Lotion
Penn Test Aspir./100's
Lilt VC
Rapid Shave/Econ.
Tame Creme Rinse
Anacin/30's
Sta Set Spray/15 oz.
Vaseline Hair Tonic/Gt.
Lustre Lotion/Lg.

Bonne Bell has been doing something with the large economy-size package. This is a gallon jug containing their antiseptic cleansing lotion, Ten-O-Six. It is a plain gallon jug but with a huge gold rosette of a bow around the jug neck together with a gold-sprayed plastic funnel splashed with multi-colored sequins. For display purposes, it has a reprint of a *New Yorker* ad hung on the front.

In a drive to get display, Bonne Bell has been running a salesmen's contest in which each salesman making the quota will be presented with a matching gallon jug of cologne. Dana's Twenty Carats has been selected. At the end of the contest, Dana salesmen in the territory will award the gallon jug of Twenty Carats to the winning Bonne Bell salesman.

With Bernardin · Quality is a **SERIES** of satisfactions

THE LINER STORY

The liner of a closure must *live with* the product it is helping to seal through months or possibly years. It must fit freely yet securely, and be free of any imperfections in the backing or facing material.

Because so much depends on the liner, it must be under constant scrutiny through each of many inspections until it is an integral part of the closure.

You see here, a liner being studied after a series of tests. Around the liner, as around *each* step in Bernardin production, both automatic and manual controls guard the quality of that step to insure quality in each different function from capping line to the consumer's ultimate possession. That is why Bernardin follows its exacting manufacturing process—to insure Quality that provides a whole *series* of satisfactions.

QUALITY METAL AND PLASTIC CLOSURES BY

BERNARDIN

Bernardin Bottle Cap Co., Evansville, Ind.

News in Packaging . . .

New Rigid Polyethylene Jars from Celluplastic

The Celluplastic Corporation has introduced a line of rigid, linear polyethylene jars especially for the cosmetic, chemical and industrial fields. Constructed of Marlex, a product of the Phillips Chemical Company, the jars are opalescent and one-fifth lighter than glass. The unbreakable plastic closure eliminates rusting and discoloration. Available in up to four colors, the container comes in a variety of sizes.

Guerlain Introduces French Lipstick Case

A lipstick case designed by a French jeweler for Guerlain, Inc., has been introduced by the company. It is a slender, ribbed silver-toned column etched with tiny sparkly dots and banded in burnished gold. Refills in all Guerlain lipstick shades are available.

Saturated Sponge in Flexible Film Package

The Ivers-Lee Company has developed a method for sealing a fully saturated sponge in an individual flexible film package. The sponge retains liquids as well as many creams in a moist state, and can be produced in single units or strips, in foil or transparent films. These can be imprinted with directions and advertising message. Among possible uses, the firm suggests alcohol for pre-injection preparation of the skin and cleansing cream for cosmetic kits or for hotel and motel bathrooms.

Pediatric Pals

Lederle Laboratories Division, American Cyanamid Company, has developed three containers in the shape of little men to distribute single-teaspoon starter samples to physicians. Young patients are thereby introduced to pleasant tasting pediatric dosage forms. A tiny worker holding a wrench and covered almost to his nose with a helmet contains Incremin with iron; a clown with a typically large nose contains Achromycin V, tetracycline; and a spaceman contains Kynex Acetyl sulfamethoxypridiazine.

Risdon Valves Abroad

Valves and actuators manufactured by the Risdon Manufacturing Company are now being imported by the Olivin Company of Wiesbaden, West Germany, and Risdon's licensee in Italy, Solfrene S.p.A. of Milan, is manufacturing and also filling two new aerosols there.

The German products are a deodorant, Exo Bac Spray, packaged in a plastic-coated bottle with a glass bottle valve and standard horizontal actuator, and Oil-Hot, a suntan spray in a metal container using a Micro-Mist valve and actuator. The Italian products are Spray Tan, a suntan lotion marketed by Cosmopolitan Brands, Inc., which uses a standard metal container valve and a special foam actuator, and Bluet, a deodorant manufactured by H. Roberts, which comes in a plastic-coated glass container by H. Dosjonqueres S.A. of Paris, and uses the Micro-Mist valve and actuator.

Abbott Laboratories's new table bottle for 60 Sur-bex with C Filmtabs, which provides a balanced vitamin B-complex formula with ascorbic acid. Coating seals taste, odor.

Canco Offers Plastic Toothpaste Tube

A new coating for polyethylene developed in American Can Company's research laboratories makes possible the packaging of toothpaste in plastic squeeze tubes. The coating, applied to the tube's inner walls, forms an effective barrier against sidewall permeation by odor, flavor, solvents, oxygen, oil and grease. It also protects the polyethylene from formulations that cause it to swell and degrade. The firm's own tests have indicated "negligible permeation" and a shelf life well beyond the minimum required, according to C. L. Alexander, vice-president and general manager of the company's Bradley-Sun division.

The tube can be made in several combinations of diameter and length, using either clear or pigmented polyethylene. Label decoration is applied by offset printing.

The new lining is expected to be applicable to other items not now packagable in plastic.

New plastic-coated glass bottles by Owens-Illinois Glass Company for three Cara Nome toiletries marketed by Rexall Drug Company. The closures are low-pressure aerosol caps.

Toni Company's new Pamper Shampoo container with stability, excellent grip and broad face for labeling, designed by W. Braun Co., label, Steigerwald, cap, Armstrong.

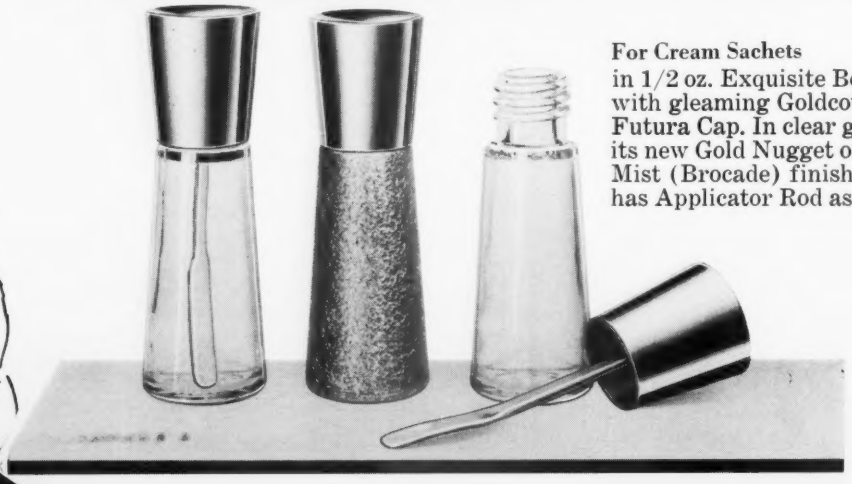
J. B. Williams's redesigned bottle for Aqua Velva. Bottle by Brockway Glass Company, cap by Owens-Illinois Glass Company, labels by Fuller Label Division, Standard Packaging Corp.

RICHFORD offers the new shape...

in Sachet Containers

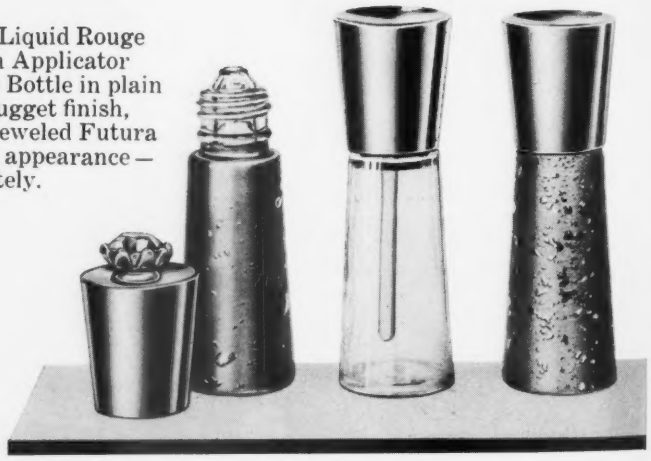
A new flat oval 1½ oz, Jar, #1908—with or without Sifter Top and Goldcote Closure for sachet powder. And a companion 1/2 oz.,

#R-33, Liquid sachet bottle with Touch-N-Flo dispenser unit—gold metal protector cap. (Patented)



For Cream Sachets in 1/2 oz. Exquisite Bottle with gleaming Goldcote Futura Cap. In clear glass or its new Gold Nugget or Gold Mist (Brocade) finish. Cap has Applicator Rod as shown.

A new 2 dram Liquid Rouge Container with Applicator Rod. Exquisite Bottle in plain or new Gold Nugget finish, with plain or Jeweled Futura Cap. Deluxe in appearance—priced moderately.



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Showrooms:
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350 Fifth Avenue New York, N.Y.

Du Pont's New Thermoplastic

Delrin acetal resin, a highly crystalline, stable form of polymerized formaldehyde, has been introduced by Du Pont. The material contains metal-like mechanical properties such as a high degree of strength and rigidity, and has high dimensional stability, tensile and flexural strength, resilience and toughness, all of which properties Delrin retains under a wide range of conditions—temperature, humidity, solvents and stress.

According to Du Pont, aerosol containers made of Delrin were shelf-stored for over a year; others were stored for three months at 130°. In both cases the contents were still completely dischargeable. The freedom to design new container shapes and in the use of colors also makes this new thermoplastic attractive for aerosols.

A table of typical properties is supplied in a four-page announcement available from the firm's advertising department at the Nemours Building, Rm. 98D, Wilmington 98, Delaware.

New Teflon Laboratory Ware

W. S. Shamban & Company, Culver City, California, has a new line of Teflon laboratory ware called Shamco. Since Teflon is chemically inert, with a wide temperature range (−450° F. to 550° F.), and flexural and tensile strength, the new ware is said to eliminate the hazards and inconveniences of breakable glassware.

Included are stirring rods, watch glasses, beakers, micro and semi-micro beakers, evaporating dishes and tubing.

Perfumes in Miniature

Parfums Ciro's French Miniatures, which were introduced for the Christmas season of 1958, are now being marketed by means of a counter display unit carrying out the French tricolor motif. It holds 12 miniature hat boxes each containing a 1¼-dram replica of one of Ciro's four perfumes. Selling for $1.50 each, they are offered for both sampling and gifts.

Guide to Packaging in Corrugated Boxes

Hinde & Dauch Division, West Virginia Pulp and Paper Company, has made available a 32-page booklet called How To Pack It. The basic box styles described are well-illustrated with photographs that show how each one functions.

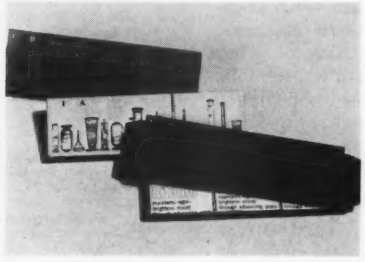
A list of the division's sales offices is provided. The booklet is available from Hinde & Daunch, 407 Decatur Street, Sandusky Ohio.

Thatcher Introduces Polyvinyl Squeeze Tube

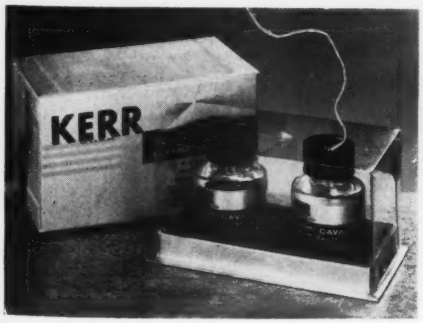
For shampoos, oils, creams and the like, Thatcher Glass Manufacturing Company's Plastic Container Division is offering transparent polyvinyl squeeze tubes. The flexible tubes are non-porous, and can be used to package many products that cannot be packaged in conventional thermoplastic materials.

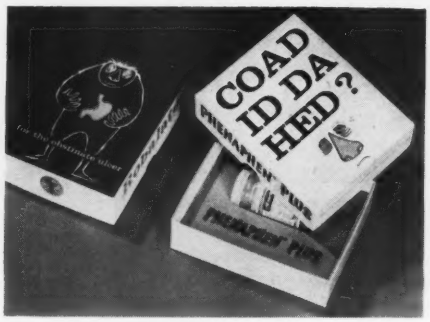
The tubes are available in sizes from ¼ ounce to 10 ounces. They can also be custom made to fit specific requirements.

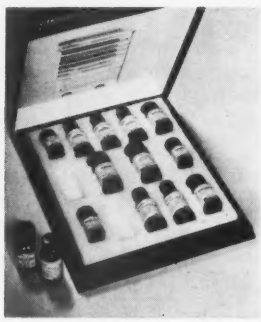
WINNERS IN THE 1959 SET-UP PAPER BOX COMPETITION sponsored by The National Paper Box Manufacturers Association, at the Sheraton Hotel, Philadelphia: First Award in Drug Mailers, a dual window mailing box by W. C. Ritchie Division, Stone Container Corp., manufactured for G. D. Searle & Company and designed by Searle; Second Award in Drug Mailing Boxes, a repeated formula for related drugs with a specific color for each by Newark Paper Box Company manufactured for Ciba Pharmaceutical Products, Inc.; Honorable Mention in Drug Mailing Boxes, a package in the shape of a house to provide physicians with a personal supply of Achromycin by C. Albert Sauter Company, Inc., manufactured for Lederle Laboratories Division, American Cyanamid Company, box designed by Irv Teicher, Lederle, printing designed by Comart Associates, Inc. Ninety-four awards in 26 categories were made from 2,400 entries, on the basis of merchandising appeal.



First Award in Drug and Pharmaceutical Boxes, a box within a box with an acetate lid, by Paper Package Company, manufactured for Kerr Manufacturing Company, designed by Paper Package Company; Honorable Mention in Surface Design and Execution, humorous design emphasizing product's use, by Wilson Paper Box Company, Inc., manufactured for A. H. Robins Company, Inc.; Honorable Mention in Superiority of Construction, a hinged, tapered presentation box with moulded styrofoam insert to hold samples covered in leatherette paper and holding cards with specific information in a card file inside lid, by C. Albert Sauter Company, Inc., manufactured for McNeil Laboratories, Inc., designed by Edwin R. Steel. Judges were Albert S. Daniel, John H. Ewing, Philip Lisbon, Robert L. Monahon, Frank A. Muller, Maxwell B. Rogers and Lawrence H. Zahn. They observed that coordinated packaging of related items and its advantages continue to increase.







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Can you cash in on these opportunities? Our ISOTRON Laboratory will help you find out . . . and give you technical aid in preparing your formula for production . . . on a personal, strictly confidential basis, of course. And here's a list of experienced contract fillers who offer you other valuable services, as well as complete production facilities.

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Aerosol of Georgia, Inc.
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Division of Zenith Drug Inc.
Newark, New Jersey
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A-M-R Chemical Company Inc.
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Armstrong Laboratories
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Associated Brands Inc.
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G. Barr & Co.
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Capitol Packaging Co.
Forest Park (Chicago), Ill.
Claire Mfg. Co.
Ft. Lauderdale, Fla.
Chase Products Co.
Broadview, Illinois
Continental Filling Corporation
Danville, Ill.; Hobart, Indiana
Eversady Pressurized Products
Cleveland, Ohio
Fluid Chemical Company, Inc.
Newark, New Jersey
Fuld Brothers, Inc.
Baltimore, Maryland
Gard Industries Inc.
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Haas Chemical Corporation
Scranton, Pennsylvania
I-K-I Manufacturing Co., Inc.
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National Spray Can Filling Corp.
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Orb Industries
Springfield, Pa.
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Attica, N. Y.
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Powr-Pak, Inc.
Bridgeport, Conn.
Products Packaging, Inc.
Cleveland, Ohio
Professional Products Laboratories
Baltimore, Maryland
Puritan Distributors Co.
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Scranton Aerosol Packaging Div. of the Scranton Corporation
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Strobel Products Co., Inc.
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Strouse Inc.
Norristown, Pa.
Thomasson of Pa. Inc.
Norristown, Pa.
Wellston Aerosol Mfg. Co.
Wellston, Ohio

NEWS and VIEWS

BY TED KLEIN PUBLIC RELATIONS DIRECTOR*

Target Diabetes

There are more than 1,000,000 known diabetics in this country, and there are almost as many undiagnosed diabetics. The organization most interested in these two million Americans is the American Diabetes Association, one of our most unique and best managed medical groups, and the only national, nongovernment organization of its kind.

As a medical organization of 2500 MD's, it is primarily supported by dues from its members, publication, post graduate courses and contributions. The Association publishes a scientific journal *Diabetes*, and a publication for diabetics called *ADA Forecast*, circulation 60,000, cost $2.00 per year.

As a national medical association, it works entirely through 900 county and state medical societies, and 42 chapters, which are affiliated through the national organization.

It is worth calling attention to the way this organization has been quietly working since 1940 to improve the national health and, more precisely, that of the diabetic. The Association does not conduct a national fund-raising program when diabetes societies go to the public for financial support, although local chapters may join some United Fund appeals.

One of the Association's important objectives is the detection of unknown diabetics. Each year some 65,000 individuals will become diabetic, and about half of them will not know they have the disease. The detection program centers around Diabetes Week, a national program organized by the Association and implemented by the 900 medical societies, which have organized committees, as well as the 42 chapters.

The main object of the week-long drive is to get individuals to take simple diabetes detection tests. Material for 2,000,000 of these tests is distributed annually by the association. Leaflets, signs, press kits, radio and TV announcements, as well as a great deal of material to the medical profession, make up the bulk of promotion for Diabetes Week.

In the age of health organizations for known and some unknown diseases, it is interesting that diabetes has a well-run, efficiently directed group who have done an important job in a major health problem.

Numbers

The Public Health Service has recently released statistics of interest to anyone concerned with providing for the better health of our nation through the improvement of the health of the young.

Prevention is the keynote of this program led by Surgeon General Leroy E. Burney. He cites some illuminating numbers.

- Seventeen million children under 15 are injured in accidents yearly.
- Accidents in the home are the major cause of injury to children under 15. Most of these are caused by falls, cuts, burns and accidental poisoning.
- There is an expected unsurge in polio this year. By mid-April some 231 paralytic cases had been reported, as compared to 127 for the same period last year. Almost 22 million young people under 20 have not had the full vaccination of three or four Salk shots, and 13½ million have had no vaccine at all. Of the 20½ million children under five years, the group most susceptible to polio, 6.2 million have had no vaccine and only 9.8 million are fully vaccinated.
- Two-thirds of the cavities in the teeth of the nation's children are neglected. The average 16-year-old has lost several teeth and has nine decayed. Family dental bills total 1.7 billion dollars a year, although only 40 per cent of the population gets treatment in any one year.
- Some 50,000 cases of infectious venereal disease are reported each year for individuals under 20 years of age.

$1,000 a Speech

The Fund for Adult Education announced recently that it will award $1,000 each for the three best speeches or articles on public leadership given or written during 1959 and 1960. Eventally the Fund will publish the prize-winning talks in a single volume.

These awards are designed to generate the best thinking on the nature of public leadership, and to encourage the discovery of ways by which more adequate education can be provided to prepare American leadership on every social, economic and political level.

Leaders in the drug and cosmetic industry are hereby advised: you now can qualify for a $1,000 award for many of the same talks you have been giving for years. Mr. C. Scott Fletcher, President, The Fund for Adult Education, 200 Bloomingdale Road, White Plains, New York, will provide you with details.

Films for PR

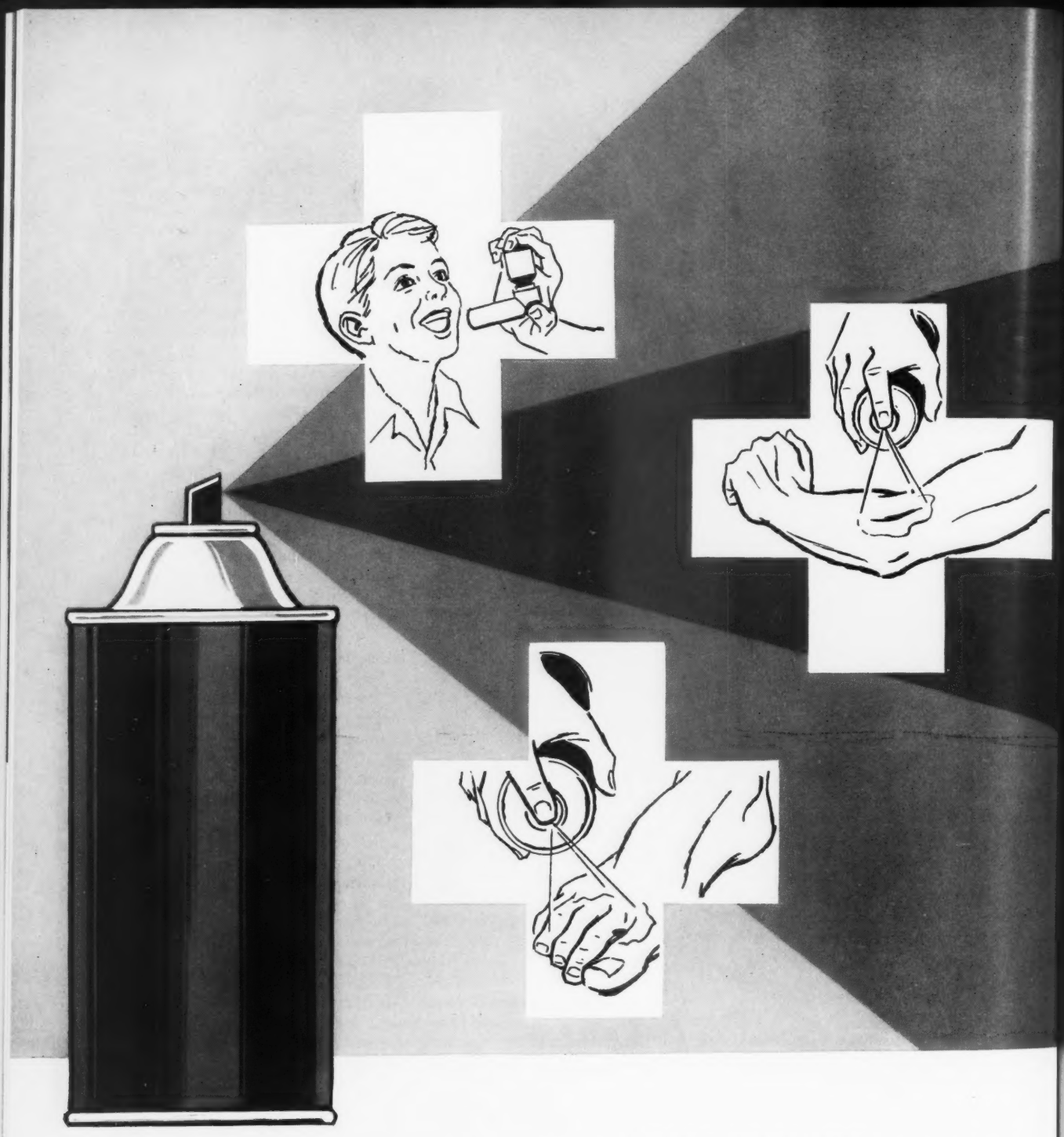
One of the least understood aspects of present-day public relations is the use of 16 mm. sound films. Most companies feel that the "image-building" film is only for the giant corporation that can afford to spend money without worry about product promotion, which is far from true.

A large manufacturer of soap introduced one of these films a few years ago, and it has since been shown over 200 thousand times to more than 15 million people. Its cost was probably less than $25,000. However computed, its average cost per impact has been very low. Today, with not only TV stations crying for material, but also schools and clubs, such an investment can really pay off.

Huxley on Advertising

Putting one word after another to describe a product is the job of the advertising copy writer. To many, it appears to be a simple task requiring a minimal knowledge of the language and a high school understanding of grammer and spelling. "Not so," says famed novelist Aldous Huxley. According to him, "It is far easier to write ten passably effective sonnets, good enough to take in the not too inquiring critic, than one effective advertisement that will take in a few thousand of the uncritical buying public."

*Paul Klemtner & Company, Inc.



Newest packaging idea in a $187,000,000 market

How big is the pharmaceutical market? In 1957, $187 million worth of drug and pharmaceutical products were sold, not including $1.7 *billion* worth of prescription items. In these markets aerosol sales are gaining rapidly. They amounted to $9.3 million in 1957, almost a 300% increase over 1956. Aerosols have made a major breakthrough in pharmaceuticals after revolutionizing sales for hair fixatives, colognes, insecticides and a host of other products.

The reasons for this success are simple. Aerosols deliver the product in a completely new form that's easier, more effective and often more economical to use. If your product can be brushed, poured or sprayed, you stand a good chance to add new sales appeal—create vast new markets—if you package it in an aerosol.

It is not necessary to set up your own packaging line to enter this field. A custom filler near you has the knowledge and equipment to help. He can package your formulation for testing and help you in all phases, from planning through production.

If you don't know the name of a custom filler, write Du Pont. We'll send you a list and include survey data on your market for aerosol products, plus information about Freon* propellents for aerosols. "Freon" is preferred by custom fillers and is used in more of today's aerosols than any other propellent. Write: E. I. du Pont de Nemours & Co. (Inc.), "Freon" Products Div. 346, Wilmington 98, Delaware.

Best-selling aerosols are powered with

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BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

*Freon and combinations of Freon- or F- with numerals are Du Pont's registered trademarks for its fluorinated hydrocarbon propellents.

Patent thoughts and trends

BY THOMAS CIFELLI, JR., PATENT ATTORNEY*

Selling Your Own Patented Chemical May Make You an Infringer

Patents are often considered a form of property; and, as is the case with other property rights, patent rights may be leased, sold or otherwise transferred. However, there are many aspects of patent rights which do not have their counterpart in general property rights, and vice versa. We might consider just one of these differences here.

If you own an automobile, or a house, or a boat, or any of the other forms of property, and you sell this property to a competent purchaser, there is no possible way in which you can be held liable for having committed a legal wrong. The same thing cannot be said about patented items. For example, you may have a patent on a new chemical and even while your patent is still in effect it is possible that you yourself may be held as an infringer, under certain conditions, when you sell your own patented chemical.

At this stage the reader may be pardoned if he feels completely confused. However, if just a little patience is exercised the situation can be clarified very easily.

The problem arises when someone else succeeds in obtaining a patent himself on a composition involving your patented chemical as one of the ingredients. In such a case, while you may be the only one who has the right to make, use or sell the patented chemical, you do not have the right to sell it for use as an ingredient in the composition patented to another. Of course, the other party would not have the right to make, use or sell the patented composition because if he did he would be infringing your patent on the chemical by reason of his using it in his patented composition.

It may be of interest to consider the legal situation rather briefly and also what can be done to minimize the chance of such a problem arising and, finally, to consider ways of resolving the problem after it has arisen.

Patent considerations. First, let us consider why the Patent Office will grant a patent on a chemical and then later on grant another patent on a composition containing that chemical. The answer is very simple. If you can convince the Patent Office that your new chemical possesses properties which are not expected and your patent attorney writes up a proper application, you may obtain a patent on the chemical itself. Then, if another patent application is presented to the Patent Office and the second patent application discloses a composition which has properties which are not expected even when due regard is had for the known properties of the chemical, the Patent Office regards the second applicant as an inventor in his own right and it will therefore grant to him a patent on the composition.

You, as the owner of the patent on the chemical, have the legal right to stop everybody from making, using and selling your chemical because that is just what the patent right itself stands for. Indeed, it is some 70 years since the U. S. Supreme Court itself has ruled that all the uses or functions of an invention are covered and secured by a single patent and these include even those not known to the inventor at the time the patent is granted.

However, this right is one of *exclusion.* In other words, it does not mean that you necessarily have the right to make, use and sell the patented chemical yourself. It means that you have the right to *exclude* others from making, using and selling the patented chemical.

Ways to minimize the chances of the problem arising. At the outset it should be recognized that there is no monopoly on brains and therefore that one is expecting too much if he is looking for a surefire way of preventing the occurrence of the problem with which we are concerned. The best that can be hoped for is that the occurrences will be as few as possible.

Perhaps the best way of preventing the problem from arising is to continue research in order to determine new uses of your chemical even after you obtain the patent. In other words, do not consider that once you have obtained a patent on a chemical compound that you need to do no more with respect thereto. If you find new uses for your patented chemical obviously no one else can obtain patent protection thereon. This statement just made assumes that you disclose these new uses in some sort of a printed publication, including, perhaps a patent application of your own, or that you make actual public use or sale embodying the new use.

The foregoing method is followed by the leading chemical manufacturers in the country all the time. This can be seen from the circulars, bulletins, and other publications of these manufacturers, which are usually replete with suggestions for various uses of the chemicals.

Another way of minimizing the occurrence of the problem under consideration is to attempt to obtain claims to the compositions themselves as well as to the chemicals. We shall here pass over obstacles which such attempts may encounter in the Patent Office as it may not always be possible to obtain claims to the chemical and to the composition in the same patent. Also, where two different applications are filed a question may be raised as to whether the applicant is entitled to two patents. Further, such composition claims desirably should be as broad as possible. However, they cannot be so broad as to encompass all possible compositions including the new chemical as an ingredient. In this connection a recent decision of the Patent Office Board of Appeals may

*Richards and Cifelli, Newark 2, New Jersey

be well cited. In that case claims to novel esters of acrylic and methacrylic acid were allowed but claims to a composition of matter comprising the new compositions were disallowed. The Board in reaching its decision noted with approval the following reasoning of the Patent Office Examiner:

"It is not considered proper for applicant to preempt all reward for all inventive acts which might in the future be made involving applicant's compounds, thus stultifying all experimentation. It is considered proper and right that applicant should have coverage for the invention which she has made; but that it is not proper to permit coverage of possible inventions not yet made."

How to live with problem after it arises. If we assume that all efforts to prevent the problem from arising fail, what then? If the composition patent is so narrow and the market for it is so small, the most practical way out is to avoid offering the patented chemical for use in the patented composition. In other words, let us say that the principal use of the patented compound is as a bactercide and a composition patent covering a plasticizing composition is granted, then all advertising and other literature put out by the owner of the patent on the chemical and all claims by the salesmen should scrupulously avoid all reference to the patented chemical for the specified plasticizing purpose.

In addition, it would perhaps be advisable to include a statement on all invoices to the effect that the sale of the product in question is not to be taken as any license to use the chemical for any patented purpose.

The real problem arises where the composition patent is really valuable and covers a use which is substantial. In such an event obviously the thing to do is to attempt to obtain a license under the composition patent. The license may be exclusive or non-exclusive depending on how much the parties care to bargain. Also a cross-license arrangement may be made. Under such arrangements each party licenses the other under his own patent. Finally, it might be possible to purchase the composition patent outright. That places both patents in the hands of one owner and thereby eliminates the problem entirely.

Trademark Rulings

A number of recent trademark rulings appear to be of general interest and they are noted here. The rulings are those of the Patent Office Trial and Appeal Board (TAB), the U. S. Court of Customs and Patent Appeals (CCPA) and the Commissioner of Patents (CP).

Pow-R-Boy vs. Lawn Boy. Former used for multiple purpose garden implement for lawn mowing attachment held not likely to be confused with latter used for lawn mower (CP).

Yardloader vs. Yard Lift, Truckloader, Carloader. Although all marks are applied to lift trucks and fork trucks CP held no likelihood of confusion.

Ebony vs. Ebony. Ebony for cosmetic and toilet preparations held not likely to be confused with same mark for periodical publications (TAB).

Dextrol vs. Dectol. Both marks being used for lubricating oil, confusion was held likely (TAB).

Cor-Niks vs. Corn-Kix. Former used for flavored corn chips held not likely to lead to confusion with latter used for breakfast food (TAB).

Snap Jacks vs. Jumping Jacks. Both marks being applied to shoes, confusion of purchasers was held likely (TAB).

G M 30 vs. G M. Former used on gelatinized wheat starch for industrial use held not likely to cause confusion with G M automobiles and parts thereof, etc. (TAB).

Wiggly Wag vs. Mr. Wiggle. Even though both marks were applied to coil spring toys confusion was held not likely to occur (TAB).

Cortina vs. Corina. The use of the former on canned tomatoes was held likely to lead to confusion with the latter which is used for tomato paste and similar items.

Carmelo vs. Carmel. The use of the former for rum was held likely to lead to confusion with the latter used for wine (TAB).

Asma-Kets vs. Asmatab. Both marks being applied to non-prescription medicinal preparations, confusion between them was held likely (TAB).

Black Panther vs. Red Panther. Both marks being used for insecticides, confusion was held likely by their concurrent use (CCPA).

Carbon King vs. White King. Former used for carbon removers and for cleansing, degreasing and engine sludge sold directly to industrial users was held not likely to be confused with latter used for soaps sold to the general public (CCPA).

Tendyl vs. Pendil. Former used for hypotensive compositions was held not likely to be confused with the latter used for medicinal preparations, used for preparing water-in oily emulsions, penicillin and other drugs (TAB).

Royal Drene vs. Royal Crown. The former used for shampoo held not likely to be confused with the latter used for cologne, hand lotions, shaving lotions, talcum powder, deodorants and scalp preparations (TAB).

Primrose vs. Primrose. Use of the same mark on brassieres, corselettes, corsets, bandeaux, girdles, on the one hand, and garter belts and ladies' and children's panties, on the other, held likely to cause confusion (TAB).

RECENT PATENTS

2,865,811 — **Irval Cosmetics — Hair Straightener.**

2,865,815 — **U. S. A. — Antibiotic Mixture From Streptomyces Cinnamomeus.**

2,865,861—**Monsanto — Halogenated-3-Phenylsalicylanilides.**

2,865,911 — **Lovens (Denmark) — Esters and Thioesters of Penicillin.**

2,865,914—**Upjohn—Pregnadienes.**

2,865,915—**Merck—Pregnadienes.**

2,865,921 — **G. D. Searle — Cyclic Aminoalkyl Chlorocarbanilates.**

2,865,922—**Sandoz—Diketo Pyrazolidines.**

2,865,923 — **Chas. Pfizer — 2-Nitroethylhydrazines.**

2,865,927—**McNeil Labs.—2-Alkoxy-2-Imidazolines.**

2,865,935-6 — **Upjohn — Pregnadienes.**

2,865,951—**Upjohn—Tert. Aminoalcohol Esters of 4-Amino 2, 6-Dimethylbenzoic Acid.**

2,865,964—**G. D. Searle—Poly(Triphenylphosphonium) Compounds.**

2,866,733—**Olin Mathieson—Mucosal Anesthetic.**

2,866,734—**U. S. Vitamin Corp.—3-Pyridylethyl 2, 4-Oxazolidinediones.**

2,866,735—**Upjohn — Erythromycin Tablet With Sulfa Drugs in Coating.**

2,866,771 }
2,866,775 } — **Johnson & Johnson—Adhesive Composition.**

(*Continued on page 824*)

Off with ease

... closed tight quickly

The new Safety Cap keeps medications safe from children's hands . . . yet adults remove it easily

Owens-Illinois Snap-Caps

provide a perfect seal for dry products

Owens-Illinois plastic Snap-Caps offer use-convenience and tight, durable protection for dry products at all times. Off and on with a flick of the fingers, these tight-sealing closures stay clean and secure, no matter how many times they are handled.

The Safety Cap is another development from Owens-Illinois. It offers the advantages of Snap-Caps in ease of operation, yet it is difficult for little children to remove . . . keeps medications away from inquisitive hands. For complete information about Snap-Caps as the ideal closure for your package, call your nearest O-I office, or write to Owens-Illinois, Toledo 1, Ohio.

PRESSED PLASTICS
AN (O) PRODUCT

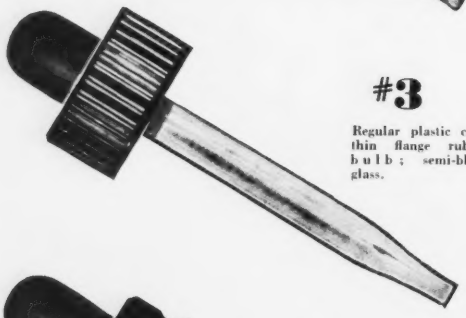
OWENS-ILLINOIS
GENERAL OFFICES · TOLEDO 1, OHIO

NEW PERFECTION = DROPPING PARTS

QUALITY UNIFORMITY CLEANLINESS SERVICE

#1

Non-rolling, extra-depth, Bakelite cap; thick flange rubber bulb; Safiee - ball glass.



#3

Regular plastic cap; thin flange rubber bulb; semi-blunt glass.

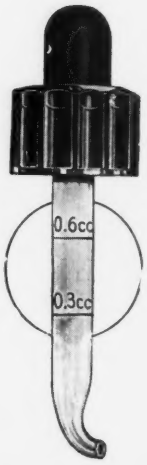
#4

Metal cap; oil-resisting Amekine synthetic rubber bulb; blunt glass.

By the Originators and World's Largest Manufacturers of Screw-Cap Dropping Parts

Since 1931, when the screw-cap dropping part was originated by Pennsylvania Glass Products, the world-wide acceptance of New Perfection has been increasing. The fact that the New Perfection Dropping Part is the most practical and sanitary dispensing unit for liquid preparations accounts for its popularity and the steady growth of our operations is due to the efficiency with which our products are manufactured and distributed.

Our exacting standards for quality, uniformity and cleanliness guarantee that each shipment will meet your most rigid specifications. Our policy is to produce and sell the best in dropping parts—and thus merit your continued patronage.



#2

Non-rolling, extra depth, Bakelite cap; thick flange rubber bulb; special bent glass (CALIBRATED in color)

New Modernistic bottle. Designed to lie flat for convenient labeling. Oval front provides ample label space.

New Perfection Dropping Parts, either plain or CALIBRATED IN COLOR, can be supplied to fit your bottle or with our new Modernistic style bottles. Our bottles are available in Amber, Blue, Green or Clear glass in 1/8, 1/4, 1/2, 1 and 2 oz. capacities. Special oil-resisting AMEKINE synthetic rubber bulbs can be supplied for use with oil products, or natural rubber bulbs for general usage.

WRITE FOR SAMPLES AND QUOTATIONS

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"Glass Goods of the Better Kind"

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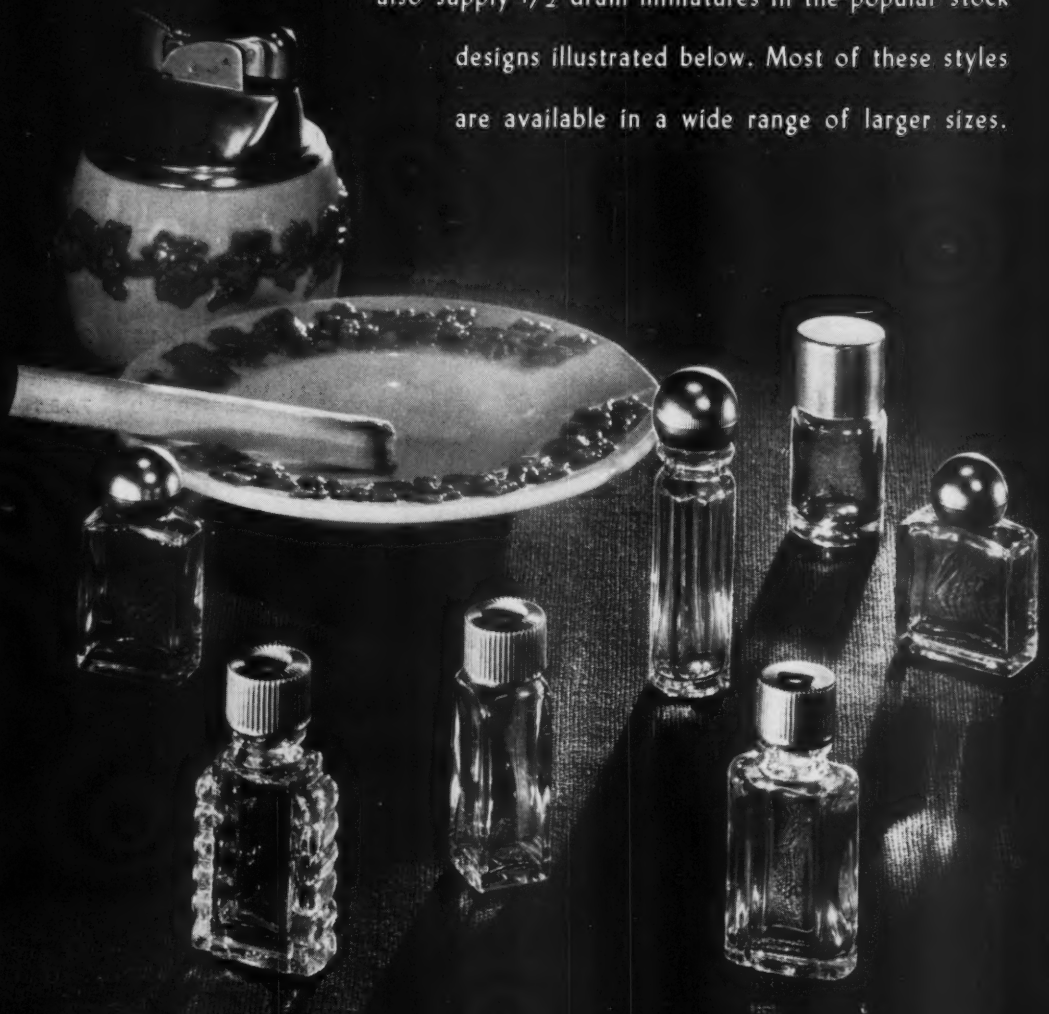
We are producing private mold miniature perfume bottles for many of the best known names in the industry. We also supply 1/2 dram miniatures in the popular stock designs illustrated below. Most of these styles are available in a wide range of larger sizes.



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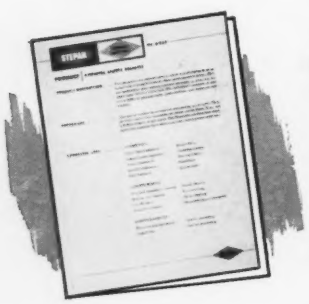
STEPANOL LAURYL SULFATES

Stepanol lauryl sulfates offer you instant solubility, high initial foam and a foam that is creamy . . . close bodied. They also provide excellent foam stability and free rinsing. These Stepanols are sulfated fatty alcohols from selected cuts of straight chain alcohols predominantly lauryl. There is a wide variety of Stepanols to meet your requirements for physical form, concentration and inorganic salt content.

TRADE NAME	CHEMICAL DESCRIPTION	PHYSICAL FORM	ACTIVE	FREE FATTY ALCOHOL	CHLORIDE	SULFATE	pH 1% SOLN.	LBS./GAL. 30°C
Stepanol WA Paste	Sodium Lauryl Sulfate	Paste	28-30	1.5-3.0	1.4-1.8	1.4-1.8	7.5-8.5	8.67
Stepanol WAQ	Sodium Lauryl Sulfate	Viscous liquid	28-30	1.5-3.0	0.3-0.8	1.4-1.8	7.5-8.5	8.67
Stepanol WA Special	Sodium Lauryl Sulfate	Clear viscous liquid	28-30	1.0-2.5	0.3-0.8	0.5-1.0	7.5-8.5	8.67
Stepanol ME Dry	Sodium Lauryl Sulfate	Powder	90-94	1.5-3.5	1.0-2.0	1.5-3.5	8.5-11.0	
Stepanol ME Dry AW	Sodium Lauryl Sulfate	Powder	90-95	0.5 Max.	1.0-2.0	1.5-3.5	8.0-10.5	
Stepanol WAT	TEA Lauryl Sulfate	Clear liquid	39.50-41.0	1.3-2.0	1.0-2.0	2.3-4.5	7.0-8.5	8.7
Stepanol DEA	DEA Lauryl Sulfate	Clear liquid	33.5-36.0	1.25-3.25	1.3-2.6	2.6-3.5	8.4-8.7	8.58
Stepanol AM	Ammonium Lauryl Sulfate	Viscous liquid	28-30	1.5-3.0	0.5-2.0	1.5-2.0	5.5-6.5	8.53
Stepanol T-28	Special Sodium Lauryl Sulfate	Viscous liquid	35.5 Min.				9.0	8.6



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Included are suggested formulations for a wide variety of liquid, liquid creme and paste shampoos as well as hand cleaner, shaving cream, rug shampoo, and bubble bath formulations.

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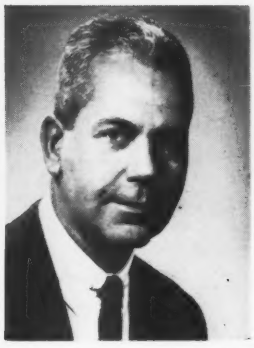

From left to right: Donald A. Beardsworth, midwestern manager, Aerosol and Industrial Products Division, The Risdon Manufacturing Company; John R. Jewett, vice-president, assistant to the president, Pitman-Moore Company; Dr. John N. McDonnell, general manager of the Pharmaceutical Laboratories Division of Schieffelin & Company; and Peter K. Sheffield, who is now the assistant secretary, Sheffield Tube Corporation.

NEWS...

Appointments and Promotions

Donald A. Beardsworth has been named midwestern manager of the **Aerosol and Industrial Products Division of the Risdon Manufacturing Company,** effective July 1. He succeeds Andrew Peasco, who is returning to the firm's headquarters. Mr. Beardsworth was formerly with Union Wire Die Corporation.

John R. Jewett, who has been with the **Pitman-Moore Company** since 1948, has been promoted from assistant secretary to vice-president, assistant to the president, K. F. Valentine.

Dr. John N. McDonnell has been appointed general manager of the **Pharmaceutical Laboratories Division, Schieffelin & Company,** with additional responsibilities for the firm's research in ophthalmic, dermatologic and diagnostic agents, and for the marketing of the Almay line. Dr. McDonnell was formerly vice-president, Schering Corporation.

The **Sheffield Tube Corporation** has promoted Peter K. Sheffield from his position in sales in the Illinois division, where he has served since 1946, to assistant secretary of the corporation. Mr. Sheffield is the son of W. Kyle Sheffield, executive vice-president and secretary.

The Reheis Company, Inc. has announced appointment of Ernst H. Kastning as vice-president and technical director, and of G. Wesley Joithe as vice-president and treasurer of the company. Mr. Kastning has for 17 years directed chemical manufacturing operations at the Mamaroneck, New York plant, Warner-Lambert Pharmaceutical Company. Mr. Joithe, treasurer at Reheis since 1957, was previously in administration, Warner-Chilcott Laboratories Division, Warner-Lambert.

Robert F. Bourke has joined the sales staff of **Commercial Solvents Corporation,** with headquarters in the regional office in San Francisco. He was formerly technical representative for Colgate-Palmolive Company.

Dr. Charles G. Goebel has been promoted from manager, Organic Chemicals Research, to research director of **Emery Industries, Inc.** Emery has also promoted the following: Victor J. Muckerheide from manager, Process Research, to technical coordinator; Dr. Karl T. Zilch, from head of the production research group to succeed Mr. Muckerheide; Dr. Louis M. Wise, from group leader to manager, Sanitone Research; Dr. H. Fred Oehlschlaeger, from head of the oxidation group, to manager, Derivatives Research; and Dr. Fred O. Barrett, from head of the polymerization group, to manager, Polymerization Research. The last two sections have been newly created, dividing the activities of the former Organic Chemicals Research section.

Max Parker of the **Veterinary Division, Abbott Laboratories,** has been promoted to assistant manager of the Division.

Lowell F. Johnson, who joined **American Home Products Corporation** in 1954 as assistant to the vice-president in charge of industrial relations, has been named vice-president for industrial relations.

Warren F. Peltzman, formerly associated with the Warner-Lambert Research Institute, has joined **G. W. Carnrick Company** as assistant director of product development.

Ernst H. Kastning, vice-president and technical director, and G. Wesley Joithe, vice-president and treasurer, Reheis Company; Robert F. Bourke, who has joined the sales staff of the Commercial Solvents Corporation; and Dr. Charles G. Goebel, research director, Emery Industries, Inc.

For *bases of character,* soundly constructed and fully rounded . . .

For priceless aids in touching up compounds and adding a ***distinctive note*** . . .

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From left to right: Kenyon D. Bowes, a member of the board of directors and also vice-president and treasurer, John A. Purinton, Jr., who has become vice-president in charge of production, and Daniel C. Searle, now assistant to the president as well as secretary, all of the general management group of G. D. Searle & Company; and John Peterson, who has joined Baxter Laboratories, Inc., as general sales manager.

G. D. Searle & Company has announced higher posts for three members of its general management group: Kenyon D. Bowes, treasurer, has been elected a member of the board of directors, and vice-president and treasurer; Dr. John A. Purinton, Jr., director of production, has been elected vice-president in charge of production; and Daniel C. Searle, corporate secretary, has been appointed assistant to the president as well. Mr. Searle is a great-grandson of the company's founder.

John Peterson, formerly sales manager, W. R. Grace & Company, has joined **Baxter Laboratories, Inc.,** as general sales manager.

Everett J. Weaver has been appointed sales representative of the **Aromatic and Odor Control Division, Rhodia, Inc.,** for Texas. He was formerly chief chemist for the Butler Chemical Company.

The board of directors of **Shulton, Inc.,** has elected Victor F. Sommer a member. With Shulton since 1942, Mr. Sommer served most recently as plant manager.

Bourjois, Inc., has appointed G. A. O'Reilly vice-president-sales, and W. R. Keogh vice-president-operations. Mr. Keogh was formerly executive assistant to the president, F. X. Patrey, and Mr. O'Reilly has served as sales manager since 1958.

In connection with the expansion of its Research and Medical Department, **Ames Company, Inc.,** has appointed Dr. Hugh A. Miller assistant medical director and James A. Murphy product development coordinator. Dr. Miller has been involved in the development and evaluation of new therapeutics and diagnostic agents until now; Mr. Murphy has served as professional service representative in Iowa.

Andre Fromentin, head perfumer of Roure-Dupont, Inc., has returned to the research laboratories of **Roure-Bertrand Fils & Justin Dupont,** France, after 12 years in the States.

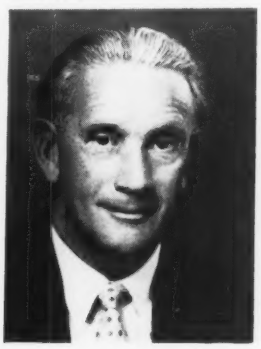
John J. Breckenridge, who has served since 1953 as assistant to the president and house counsel for Bristol Brass Corporation, has been chosen secretary of **Mead Johnson & Company.** Dr. Robert C. Gow has left private practice in pediatrics to become associate medical director, Nutritional and Pharmaceutical Division.

Coty, Inc., has made four executive changes: Wallace T. Drew, now vice-president, marketing was formerly vice-president and account supervisor, Cunningham and Walsh Advertising Agency. Lester I. Koeppen, formerly Coty regional manager and sales manager, is now vice-president, sales. Morgan D. Lefferdink has moved from sales manager to vice-president, wholesale division. And Jean P. Millon, now vice-president, trade relations, has held executive posts in sales.

Murray Stempel has been elected president of **Morningstar-Paisley, Inc.,** succeeding George J. Muller, who has been elected vice-chairman of the board. With the firm for 35 years, Mr. Stempel served most recently as executive vice-president.

Charles W. Davies has been named general sales manager of the **Pharma-Craft Company, Division of Joseph E. Seagram & Sons, Inc.** He formerly headed the sales force at Carter Products.

Everett J. Weaver, new sales representative of the Aromatic and Odor Control Division, Rhodia, Inc.; Victor F. Sommer, elected to the board of directors, Shulton, Inc.; and G. A. O'Reilly, vice-president-sales, and W. R. Keogh, vice-president-operations, both of Bourjois, Inc.



Luis G. Arce of Peru has been appointed senior medical writer-editor, **Scientific Information Division, Eaton Laboratories.** Since his arrival in the United States in 1952, Mr. Arce has been medical writer for Mead Johnson & Company and then the Squibb Institute for Medical Research. Johanna De Paul of Germany has joined the Division as scanner-translator of German, Russian and English medical journals, and Barbara Werle has a similar position, translating from French and German.

Alfred Klein has been given charge of statistical quality control of finished products and incoming packaging materials at **Chesebrough-Pond's** Clinton laboratories. He held a similar position at Revlon, Inc. Francis P. Bishop has been transferred from the Clinton plant, where he managed the lipstick and face powder departments, to New York City headquarters, where he is assistant director of personnel.

J. Franklin Everett has been promoted from chemist to manager in closure technical service, **Armstrong Cork Company.** He succeeds the late Joseph A. Benner.

Edward A. Ochs, general sales manager, **Hazel Bishop, Inc.,** has been named marketing vice-president.

Carrtone Laboratories, Inc. has appointed Stuart L. Watson vice-president, administration, and Wilbur J. Jones vice-president, production. Mr. Watson was formerly sales service manager and Mr. Jones production manager, both with S. E. Massengill Company.

Donald E. Clarke has joined **Max Factor & Company** as personnel director. He had been personnel supervisor with Collier Carbon and Chemical Corporation.

George K. Parman is now technical director of the Vitamin Division and Paul E. Sleezer is assistant technical director, **Hoffmann-La Roche, Inc.** They formerly served in the technical capacities with the Roche Bulk Vitamin Division.

Dr. Cecil P. Headlee has joined **C. B. Kendall Company** as scientific director. Since 1956, Dr. Headlee has been associate professor and chairman of the department of pharmacology at the St. Louis College of Pharmacy and Allied Sciences.

Burton E. Beck, vice-president, industrial relations, has been elected to the board of directors of **Eli Lilly and Company,** to fill the vacancy left by the resignation of A. H. Fiske.

The **Squibb Institute for Medical Research** has added five to its research staff: Dr. David Rosenthall, a research associate from Harvard, as research associate, organic chemistry division; Dr. David Brennan, formerly assistant professor of physiology, University of Notre Dame, as research associate, biochemical research division; Dr. Malcolm von Saltza as research associate, organic chemistry division; Dr. Urs Nager of Switzerland as research associate, chemical development division; and Dr. Robert Robison as research associate, steroid preparative laboratory.

The **Mennen Company** has appointed three new product managers: Frank T. Kelly, Robert Smith and Howard Rand. Mr. Smith was formerly with Colgate - Palmolive Company and Mr. Rand had been product manager with the Nestle Company.

Vina Ruggero has become assistant account executive, ethical pharmaceutical accounts, for the **Shaller-Rubin Company, Inc.** Mr. Ruggero had been promotion manager at Reed & Carnrick.

Dr. Normand Robert Goulet, a virologist for National Drug Company, has joined **Merck Sharp & Dohme, Division of Merck & Company,** as associate in biological development. I. Louis Wolk has joined Merck's corporate staff as patent counsel.

L. James Thompson, vice-president of sales, the Pharma-Craft Corporation, has been named vice-president of sales at **W. F. Young, Inc.**

Nopco Chemical Company has appointed Dr. Harold Yacowitz director of applied research, Fine Chemicals Division. Dr. Yacowitz was formerly with the Squibb Institute for Medical Research.

Jaap Kelderman has become resident manager, Middle East operations, of **Wyeth International, Ltd.** He was formerly Middle East sales manager for E. R. Squibb & Sons. Burton J. Gray has been appointed vice-president in charge of biological and pharmaceutical production for **Wyeth Laboratories,** succeeding John D. Cash, who is retiring after 18 years with the firm. Mr. Gray has been assistant to president H. W. Blades.

The **Norwich Pharmacal Company** has elected Paul R. Dohl, secretary, to the additional office of general counsel. Norwich has also promoted Frank Irvin from district sales manager to assistant sales training manager for the proprietary division.

Warner-Lambert Pharmaceutical Company has appointed two vice-presidents: Dr. Leonard A. Scheele, president of Warner-Chilcott Laboratories Division since 1956 and a member of the board of directors; and George P. Maginness, director of personnel and public relations since 1957. Frank Markoe, Jr., has succeeded Robert B. Clark as secretary. Mr. Clark continues as senior vice-president of **Warner-Chillcott Laboratories.** Mr. Markoe is also corporate counsel and a member of the board of directors of Warner-Lambert. Promotion of three sales executives has also been announced: Clifford Petitt, from field sales manager, to general sales manager; Gilbert Klein, from sales promotion manager, to assistant to the president; and Irving Mettelmann, from Milwaukee sales representative to manager of department store sales.

Chas. Pfizer & Company, Inc., has made the following changes: Haskell J. Weinstein, M.D., has joined the firm as an associate director of the clinical research department, Brooklyn. Dr. Weinstein had been clinical instructor at the University of Washington School of Medicine. Dr. John M. Weaver, a research chemist with Anheuser-Busch, Inc., has joined the biochemical research and development department. Alexander Scriabine, M.D., has been promoted to senior research pharmacologist in the macrobiology department. The directors have elected John F. Duffy treasurer, and appointed John R. Marshall, Jr., as assistant treasurer.

Benjamin H. Dorman has been elected corporate secretary of the **Rexall Drug and Chemical Company,** succeeding Harold E. Price, who is retiring after 39 years with the firm. Mr. Dorman has been with Rexall 19 years.

John R. Allison has joined **Vick Chemical Company, International Division,** as comptroller. He had been treasurer and director of Norton-Behr-Manning Overseas, Inc.

W. H. Conzen, recently named

(*Continued on page 769*)

PROOF OF UNIFORMITY

of Emersol® Stearic Acids

One of our exacting carload customers of Emersol 132 recently advised us that they were discontinuing their meticulous lab-checking of all shipments of Emersol 132 Lily Stearic Acid.

This resulted from an examination of hundreds of past lab reports in which they found that the quality of Emery Stearic Acid simply doesn't vary—and that the considerable expense involved in over one hundred analyses every year could be safely eliminated. And when you consider that the reputation of a nationally known toiletry was at stake, we think this unqualified acceptance of Emersol Stearic Acid becomes the ultimate compliment to Emery quality.

Emersol 132 is the finest of the triple-pressed stearic acids. Its extremely low iodine value and unusually low content of impurities make it the purest commercial crystalline stearic acid available. For your sake—and ours—we intend to keep it that way. Check Emersol Stearic Acids in your product . . . write Dept. D-6 for sample or descriptive literature.

P.S. You will be glad to learn that the consistent quality of Emersol 132 costs no more than any other triple-pressed stearic acid.

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Vopcolene Division, Los Angeles—Emery Industries (Canada), London, Ontario—Export Department, Cincinnati

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THE CHEMICAL HOLDINGS GROUP

Chemical Holdings Pty. Ltd. is the parent company of a group of wholly owned subsidiaries encompassing the manufacture, sales promotion, advertising and distribution of pharmaceutical and allied products. With 30 years' experience in its field, Chemical Holdings offers to overseas principals a service unequalled throughout the Commonwealth. Overseas firms interested in establishing themselves in Australia are invited to consult us. The Company, upon request, will investigate and report on all aspects of the market without obligation. All enquiries addressed to the Managing Director will be treated in the strictest of confidence.

● KINGSGROVE LABORATORIES PTY. LTD.

A modern pharmaceutical factory of 40,000 square feet equipped with modern plant and staffed with experienced and technically qualified personnel. Kingsgrove Laboratories provides its clients with a high standard of production carried out under strict analytical control. Manufacturing can be carried out on any scale and an extensive range of packaging finishes is available. Qualified personnel advise on formulations, labelling requirements, packaging, and shipment can be arranged to any part of the world. Production includes the manufacture of such items as tablets (coated or plain), powders, liquids, pastes, creams, ointments, etc. All enquiries will be treated in strict confidence and references supplied upon application.

● COMMONWEALTH AND DOMINION AGENCIES PTY. LTD.

The oldest and foremost distributing and sales promotional company in Australia servicing the pharmaceutical and grocery trades in advertised proprietaries. The company maintains a large team of specialty salesmen and depots at all capital cities. In past and recent years the company has successfully launched a large number of products in Australia and has initiated the modernisation of package presentation of many world-famous products to meet changing merchandising conditions. Evidence of the company's ability will be readily confirmed by its principals, the names of whom will be supplied by arrangement.

● PHARMEDICA PTY. LTD.

A distributing and sales promotional unit specialising in ethical pharmaceutical products. Directed by technically qualified executives of many years' administrative and practical experience, Pharmedica maintains a medical detailing force and stock depots in all capital cities, and detailmen are closely supervised by personnel with field experience. Promotional campaigns including medical mailings and journal advertising can be formulated to suit principals' budgetary requirements.
With important representations covering the United Kingdom, Switzerland, Germany and the U.S.A., references will readily be supplied on application.

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vice-president for Schering Corporation, has been elected president of the firm's Canadian subsidiary, **Schering Corporation, Ltd.,** Montreal. Francis C. Brown, chairman of the board and president of the parent company, continues as chairman of the board of the Canadian affiliate. Mitchell Chadrjian has been elected to the newly created post of executive vice-president of the subsidiary, and will continue as general manager. Dr. W. K. MacDonald has been elected vice-president and medical director, and John G. Martin secretary.

Union Carbide Chemicals Company, Division of Union Carbide Corporation, has transferred two technical representatives, Andrew H. Black to the Chicago district from New York, and John F. Flynn to New York from Boston.

Cosmetic Chemists Form International Federation

Representatives of eight countries met recently in London to form an International Federation of Societies of Cosmetic Chemists, to act in such fields as international standards, establishing professional status for cosmetic scientists, and to exchange information. Belgium, Denmark, France, Germany, Great Britain, Norway, Sweden and the U. S. were represented. A provisional secretariat was established, London, N.3.

Brand Names Foundation Elects John H. Breck, Jr.

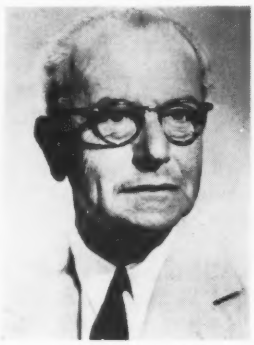
Among the new officers elected by the Brand Names Foundation, Inc., at its members' day board meeting was John H. Breck, Jr., who is the new chairman of the board. Also from the drug and cosmetic field, are Roy W. Peet, manager of the Association of American Soap and Glycerine Producers, who was again designated to represent that organization for one year, and James J. Hill, Jr., chairman of the board, Sterling Drug, Inc., who continues a three-year term as director.

Crablona Receives Ph.D.

Jean Crablona of Laboratories R.E.A.C., Grasse, France, the son of Laurent Crablona, director of the Laboratories, has been awarded a doctorate in science by the University of Lyon, *cum laude*.

A. L. van Ameringen Addresses SCC in L. A.

A. L. van Ameringen, chairman of the board of International Flavors & Fragrances, Inc., addressed a re-



A. L. VAN AMERIGEN

cent dinner meeting of the California Chapter of the Society of Cosmetic Chemists in Los Angeles. His subject was the role of fragrance in cosmetic products.

Couderchet in France

M. G. Couderchet, Charabot & Company, Inc., has left for Grasse, France, where he plans to visit the firm's principals, Charabot & Cie.

Australian Executive Visits Kolmar, U. S. A.

Leslie Lionel Hall, managing director, Kolmar (Australia) Pty. Ltd., and Mrs. Hall have been visiting the Kolmar Laboratories, Inc., in Milwaukee, and are now in Port Jervis for four weeks. Mr. Hall is here for a re-orientation on United States cosmetics and especially new Kolmar products.

Norwich President Chosen For Defense Advisory Panel

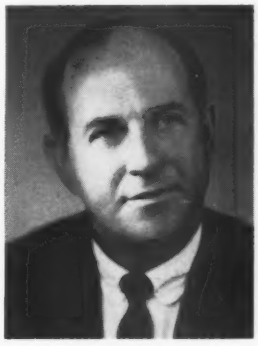
L. Eugene Daily, M.D., Norwich Pharmacal Company's vice-president in charge of the Eaton Laboratories Division, has been named a member of the Department of Defense advisory panel on medical sciences by Dr. Herbert F. York, director of defense research and engineering.

Trubek Opens New Plant

Trubek Laboratories has opened a new plant at its East Rutherford, N. J. facilities. Automation and many other technological advances are included to insure more efficient production at lower operating costs.

ACI Elects Harris

Dr. Milton Harris, vice-president for research of the Gillette Company and president of Harris Research Laboratories, Inc., was chosen presi-



MILTON HARRIS

dent-elect of the American Institute of Chemists during the annual meeting held in Atlantic City, N. J.

CIBS Salute Chevalier

Maurice Chevalier recently received the Everlasting Youth Award from the Cosmetic Industry Buyers and Suppliers Association during its annual Ladies' Day luncheon at Toots Shor's. Presented by the Association's president, John Duncan, the award was inscribed, "To the man supremely conscious of glamour and beauty, who appreciates the contribution of good grooming to feminine allure."

Visitor from Australia

Russell G. Catts, managing director of Chemical Holdings Pty. Ltd., pharmaceutical manufacturers and distributors in Australia, will visit the United States in August, to confer with persons interested in the Australian market.

F. Goby Confers Here With Tombarel President

Francois Goby, director of Tombarel Freres, Grasse, France, was in the United States a second time this year in April, to confer with Arthur Gogarty, recently elected president of Tombarel Products Corporation, the American Company. He expects to return again in October.

Jean Goby has been here since February as a technical consultant.

L. H. Singer Moves

Lawrence H. Singer, designer, has moved to 605 Fifth Ave., N. Y. 17.

Dr. Neugebauer Welcomed by U. S. Cosmetic Industry

Dr. Herbert Neugebauer, one of four directors of F. Wolff & Sohn, G. M.B.H., Karlsruhe, Germany, and director of the firm's research laboratories in Baden-Baden, has spent six weeks here visiting executives of cosmetic manufacturing companies.

Dr. Neugebauer, an authority on the formulation and manufacture of cosmetics, is now secretary of the German Society of Cosmetic Chemists, which he helped found. Consequently, he also renewed friendships with members of the American Society of Cosmetic Chemists whom he had met last summer during the Bonn Congress.

Francis Fabron in U. S. A.

Francis Fabron, head perfumer of Roure-Bertrand Fils & Justin Dupont, Paris, and the creator of many internationally known fragrances, has been in New York since February, serving as consultant on special projects.

Parke-Davis Employees Receive Gold Watches

Fifty-seven employees of Parke, Davis & Company, including Dr. Leon A. Sweet, vice-president and director of research, received gold watches in recognition of 25 years of service, at a banquet at the Veteran's Memorial Building in Detroit. President Harry J. Loynd delivered a brief report on the status of the firm, and Thomas C. Anderson, vice-president and director of production and engineering, presented the watches.

D&O Food Scholarship

To encourage undergraduates to study food technology, food engineering or food science, Dodge & Olcott, Inc., is this year presenting a $1000 scholarship under the auspices of the Institute of Food Technology. A special committee set up by the Institute will judge candidates, and the presentation will be made at a meeting of the Northeast Section of the Institute, in Boston.

Edward Weiss, a student at the Massachusetts Institute of Technology, is the 1959 winner.

Stepan Chemical Acquires Maywood Voting Stock

The Stepan Chemical Company of Chicago has acquired more than 80 per cent of the voting stock of Maywood Chemical Works, N. J., and announces offers will soon be made for all remaining capital stock, the total price to be approximately $5,000,000.

Maywood Chemical, producer of lithium, thorium and rare earth chemicals, owns its mines in S. D.

Albert J. Turner, president of Maywood Chemical Works, will continue to operate the facilities.

Perfume Factory Inaugurated in India

The new factory of Industrial Perfumes (Private), Ltd., Bombay, was recently inagurated at the Tata Oil Mills Compound, Sewri. The company is the result of collaboration between Tata Oil Mills Company, Ltd., and Roure-Bertrand Fils & Justin Dupont, France.

Tuvache Changes Hands

Durel A. Dugas has announced the sale of Tuvache, Inc., to Guy M. Bjorkman. He has also relinquished the distribution of Scandia Secret Touch Cosmetics and Marcel Frank Atomizers.

Mr. and Mrs. Dugas have announced no plans for the immediate future.

Sterling Doubles Biology Facilities

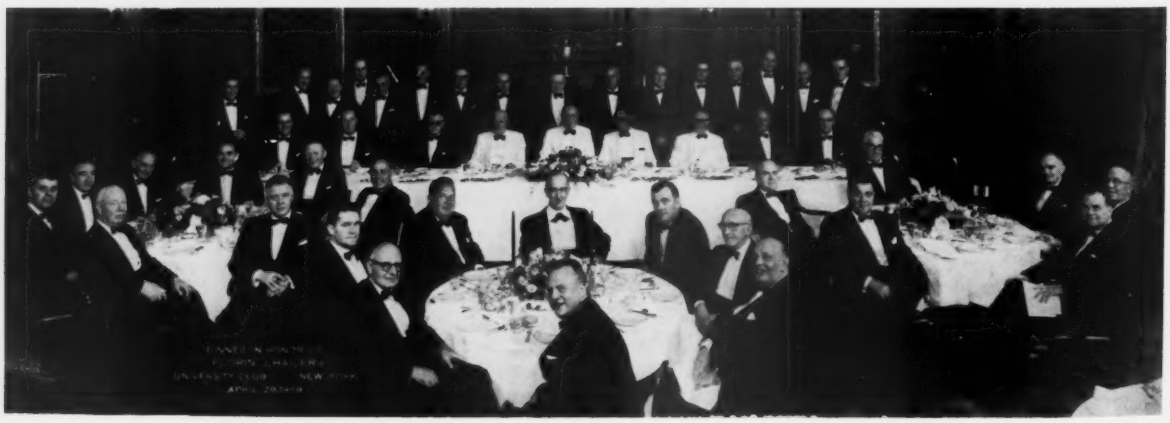
A new building now under construction at the Sterling-Winthrop Research Institute, Rensselaer, N. Y., will double the firm's present facilities for biological research. The new section is to be a natural extension of the present building, which will add 38,000 square feet to house 112 laboratories.

Morningstar-Paisley Doubles PVAc Output

Production of polyvinyl acetate emulsions by Morningstar-Paisley, Inc., has been doubled by the recent opening of a new plant in Clifton, N. J., and an increase in the output of the company's Chicago plant. According to Murray Stempel, executive vice-president, the increased use of the emulsions in the adhesives and coatings compounded by Morningstar, plus their growing popularity in many fields, especially for packaging, has made the additional facilities necessary.

Besides polyvinyl acetate emulsions, the Clifton plant is also manufacturing liquid vinyl chloride and natural and synthetic latex compounds.

Friends of Florin J. Hailer, who honored him at a dinner at the University Club in New York, on his retirement as vice-president and controller of purchases for the Rexall Drug Company, after 47 years with the firm. At the table, from left to right: Barclay E. MacKinnon, NYQ Chemical Division, S. B. Penick & Company; W. E. Johnson, U. S. Industrial Chemicals Company; Francis J. Reid, E. R. Squibb & Sons; Mr. Hailer; L. D. Barney, Hoffmann-La Roche, Inc.; Victor E. Williams, Monsanto Chemical Company; Herbert Bye, M. W. Parsons-Plymouth, Inc.; Lloyd I. Volckening, Ivers-Lee Company; and Thomas R. Farrell, *Drug and Cosmetic Industry*. Mr. Hailer is now living at 55 Forest Ave., W. Newton 65, Mass.



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CSMA Aerosol Division Appoints Norman Odell

The Aerosol Division of the Chemical Specialties Manufacturers Association has appointed Norman Odell Associates, Inc., New York public relations agency, to handle publicity and promotion for the aerosol industry. This program is supported by marketers of aerosol packaged products, loaders and manufacturers of containers, valves and propellents. Current annual aerosol product sales are running close to the $500 million mark.

Colt Packaging Machinery Company Formed

Colt "Rite-Size" corrugated box machinery and auxiliary equipment is now being sold and serviced by Colt Packaging Machinery Company. This new company has purchased the assets of the former box machinery and equipment division of Colt's Plastics Company, Inc.

Sales headquarters for the company are at 53 Washington Ave., Cranston 7, R. I., and regional sales distribution is handled by Marquardt Corporation, Chicago, and George B. Woodcock & Company, Los Angeles. Henry Owens & Company is manufacturing the machinery line.

Breck Adds New Production Line

John H. Breck, Inc., has put into operation a new shampoo production line at the West Springfield, Mass., plant. Valued at $160,000, it will increase Breck's production by nearly 100,000 units a day.

John H. Breck, Sr. (right), displays first bottle of Breck Shampoo off the firm's new production line. Others in the group are (left to right): E. P. Starbird, Esso Standard Oil Company; John H. Breck, Jr., executive vice-president; Edward J. Breck, company president.

Strong Cobb Arner, Inc. Formed by Merger

Merger of The Arner Company, Inc., Buffalo, and Strong, Cobb and Company, Inc., Cleveland, has been approved by directors of both firms. Under the terms, which are subject to final approval by the stockholders of both companies, the new firm will be known as Strong Cobb Arner, Inc.

Dr. Niels C. Klendshoj, president of Arner since 1951, will serve as chairman of the board and John N. Eustis, president of Strong, Cobb since 1955, will be president of the new corporation.

Both of the merging companies put out products only by contract for drug and allied companies, with products manufactured under their formulas, and branded and packaged under their labels.

Joint manufacturing facilities will total 500,000 square feet of plant area.

Armstrong Division Changes Its Name

The name of Armstrong Cork Company's Glass and Closure Division has been changed to Packaging Materials Operations, which is thought to be a more adequate representation of the scope of the division's operations. No organizational changes are involved.

The division is now more than a manufacturer of glass containers and closures, although it continues its former interest in glass containers. In fact, the company is currently increasing production capacity and warehousing for glass containers. However, the division's increase in the production of plastics has made the change in title necessary.

Ketchum Buys Drug Co.

Ketchum & Company, Inc., drug wholesalers, has acquired Long Island Drug Company, Inc., a wholesale drug house operating in Brooklyn, and Queens, and in Nassau and Suffolk Counties on Long Island.

Long Island Drug will continue to operate under that name, and William Steinberg, son of the firm's founder, will remain in a top management position. David Rosenberg will continue as sales manager.

All special services of Ketchum, which are provided to retailers, will be offered to the customers of Long Island Drug as soon as possible.

C. R. Miller (left) and J. C. Siegesmund, vice-presidents of Eli Lilly and Company, view sketch of $3.25-million materials center to be completed in 1960 near firm's Kentucky Ave. plant, Indianapolis. It will be used for milling, raw materials handling, chemical storage.

Risdon Changes Valve Division's Name

The Risdon Manufacturing Company has changed the name of its eight-year-old Valve Division to Aerosol Division, reflecting the firm's growth in pressure packaging.

From manufacturing valve components for other firms, Risdon's division has progressed to the development and assembly of highly specialized valves and actuators, as well as metal caps and domes for spray packages, to the manufacture of complete aerosol packages, including valves, inner containers and decorative outer containers for the fragrance industry. The company's line now includes six basic valves, with many variations of each, and more than 30 different actuators. Most developments are covered by patents or patents pending.

Risdon valves have been used in spray packages produced by manufacturers in more than 35 countries throughout the world, and the firm has licensees in six countries in Europe and the Far East.

Spatz Laboratories Abandons Retailing

Star Eye, Inc., affiliate of Spatz Laboratories, Santa Monica, Calif., has given up all activity in the retailing of cosmetics, continuing only to market its ladies' pen, the Cygnet, for the time being. This, according to Walter Spatz, president, will enable Spatz Laboratories to devote itself unequivocally to private label work on its automatic eyebrow pencil, and other products to come.

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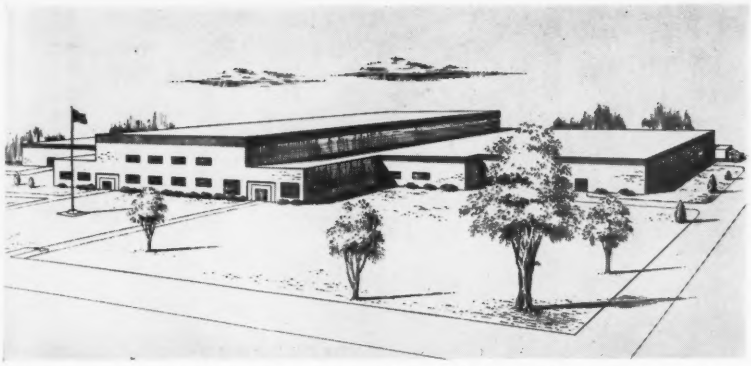


Architect's rendering of E. R. Squibb & Sons' new $2,000,000 plant at New Brunswick, N. J., site. When completed in 1960, it will consolidate the firm's New Brunswick packaging operations.

Lehn & Fink Is 85

Lehn & Fink Products Corporation recently celebrated its 85th anniversary at New York's Waldorf-Astoria Hotel. Dr. Edward Plaut, president since 1921, was presented with an engraved gold lighter by his employees.

Special guests at the Quarter Century Club meeting, during which the anniversary was celebrated, were Francois Goby, president, Tombarel Freres of Paris, and his brother, Jean Goby, general technical director. The two firms have been associated since Lehn & Fink's inception.

Seven new members were welcomed into the Club: Marie Copleston, Mrs. Alice Hamilton, Willard Siebelist, Alfred E. Owen, Virginia Sumsky, Myrtle Jollett and Mrs. Lucy Ciarco.

Lilly's British Affiliate Observes 25th Anniversary

Eli Lilly and Company's oldest affiliate, Eli Lilly and Company Limited, in Basingstoke, England, is observing its 25th anniversary.

The celebration comes as the Basingstoke plant prepares a 30 per cent expansion in floor space. This is to be a two-story building housing main offices, a lecture hall and finished stock storage. It will cost about $560,000 and provide 42,000 additional square feet when completed next year.

Zenith Builds New Research Laboratory

Ben Wiener, president of Zenith Laboratories, Inc., who was senior research scientist on the Manhattan Project, is directing the installation of Zenith's new research laboratory.

Nopco Chemical Buys Jacques Wolf & Company

Nopco Chemical Company, Newark, N. J., has acquired all the capital stock of Jacques Wolf & Company, Clifton, N. J., in a cash transaction.

Wolf will be operated as a wholly owned subsidiary, retaining its present staff and sales force. G. Daniel Davis, Nopco executive vice-president, is to become president of Jacques Wolf. Other new officers are Nopco vice-presidents Harry A. Batley and Harold A. Swanson, who become vice-presidents, and Nopco assistant secretary, Julius J. Denzler, who becomes assistant secretary for Wolf. G. J. Desmond and Arnold Pfister, Wolf officers, are treasurer and secretary.

Carter Building New Research Laboratory

Carter Products, Inc., is constructing a $2,500,000 research laboratory in Cranbury, N. J. on the Turnpike. It will contain about 60,000 square feet of space, and is the second building on the Cranbury site.

Thatcher Forms Plastic Container Division

The Thatcher Glass Manufacturing Company, Inc., has formed a Plastic Container Division as a result of Thatcher's purchase of Plastic Tube and Bottle, Inc., New Hampshire. Henry E. Griffith, founder of the plastic firm, has been elected vice-president of the new division.

F. J. Cullen Moves

Frederick J. Cullen, M.D., has moved his office to 810 18th Street, N. W., Washington 6, D. C.; suite 16; telephone, EXecutive 3-4784.

Emery's Chicago Office Moved to New Quarters

The Chicago Office of Emery Industries, Inc. is now located at 6835 West Higgins Avenue, Chicago 31; telephone, ROdney 3-5747.

The new office is headquarters for the sales representatives in five surrounding states for the organic chemicals and fatty acids departments.

Uni-Gum Corp. Now a Division of Duche

Duche Uni-Gum Corporation has been dissolved and is now operating as the Uni-Gum Division of T. M. Duche & Sons, Inc. No changes in personnel have been made, but greater facilities have been provided for expansion and research by the combination.

Lora, Inc., Established

Lora, Inc., has recently been established in Chicago, Illinois, with Dr. Emery D. Robert as president. The La Bora company has been merged with the new firm.

Dr. Robert was formerly director of research with Lady Esther Company, and had served as consultant to La Bora.

Harvey M. Manss

Harvey McKnight Manss, a director of Sterling Drug, Inc., and retired president of its Bayer Company Division, died May 22, at his home in Larchmont, N. Y., after a long illness. Mr. Manss was 73 years old.

He began his association with Sterling in 1930, and was elected president of the Bayer Company in 1937.

Charles B. Pyle

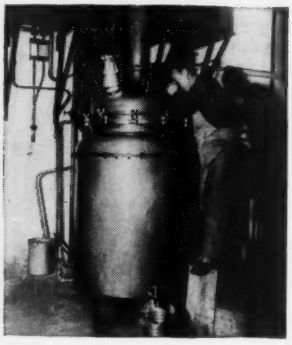
Charles B. Pyle, assistant to the executive vice-president, Merck Sharp & Dohme, Division of Merck & Company, Inc., died at his home in Tangerine, Florida, on May 19.

Mr. Pyle had been with the company for 25 years, serving as director of sales and marketing, from 1955 until a year ago, when he became assistant to the executive vice-president.

Charles Pfizer's Daughter

Baroness Alice Bachofer Pfizer von Echt, daughter of the late Charles Pfizer, co-founder of Chas. Pfizer & Company, died May 20 in New York City, at the age of 82.

CAPACITY



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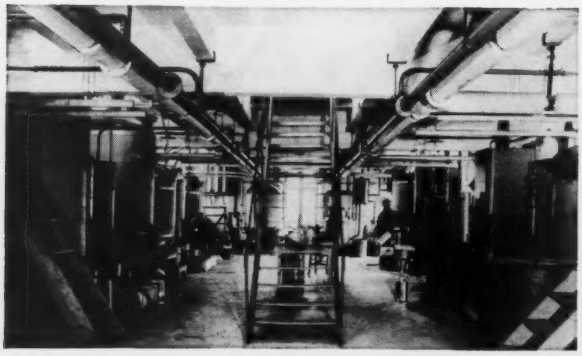
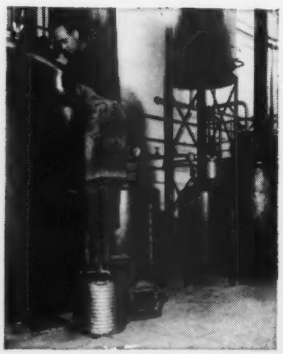
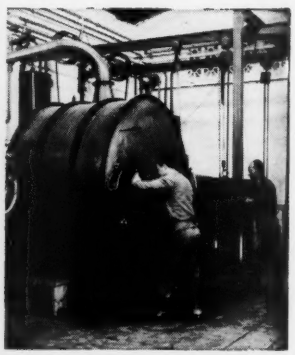

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SPECIFICATION	WHITE OLEINES		RED OILS			
	GROCO 6 USP	GROCO 5L Low Linoleic	GROCO 2	GROCO 4	GROCO 8	GROCO 18
Titre	2° – 5°C.	2° – 5°C.	3°C. max.	4° – 6°C.	8° – 10°C.	18° – 20°C.
Titre	36° – 41°F.	36° – 41°F.	37.4°F. max.	39.2°–42.8°F.	46.4°–50.0°F.	64.4° – 68°F.
Color 5¼" Lovibond Red	1 max.	1 max.	1 max.	1 max.	1 max.	2 max.
Color 5¼" Lovibond Yellow	8 max.	8 max.	10 max.	10 max.	10 max.	15 max.
Color Gardner 1933	2 max.	2 max.	—	—	—	—
Unsaponifiable	1.0% max.	1.0% max.	1.5% max.	1.5% max.	1.5% max.	1.5% max.
Saponification Value	199 – 204	201 – 206	198 – 203	198 – 203	198 – 203	204 max.
Acid Value	198 – 203	200 – 205	197 – 202	197 – 202	197 – 202	203 max.
% F.F.A. as Oleic Acid	99.5 min.	99.5 min.	99 min.	99 min.	99 min.	99 min.
Iodine Value (WIJS)	95 max.	90 max.	95 max.	94 max.	92 max.	85 max.
Refractive Index 50°C. (Average)	1.4500	—	1.4505	1.4500	1.4495	1.4485
Total Polyunsaturated Fatty Acids	—	3.5% max.	—	—	—	—
COMPONENT FATTY ACIDS						
C14 Myristic	5%	6%	5%	5%	5%	5%
C16 Palmitic	3%	2%	4%	5%	6%	10%
C18 Stearic	1%	—	1%	1%	2%	4%
C18 Oleic	82%	89%	80%	79%	77%	72%
C18 Linoleic	8%	2.5%	9%	9%	9%	8%
C18 Linolenic	1 %	0.5%	1%	1%	1%	1%
MACKEY TEST: Time to reach 105°C.	over 7 hrs.	over 7 hrs.	over 4 hrs.	over 4 hrs.	over 4 hrs.	over 3 hrs.

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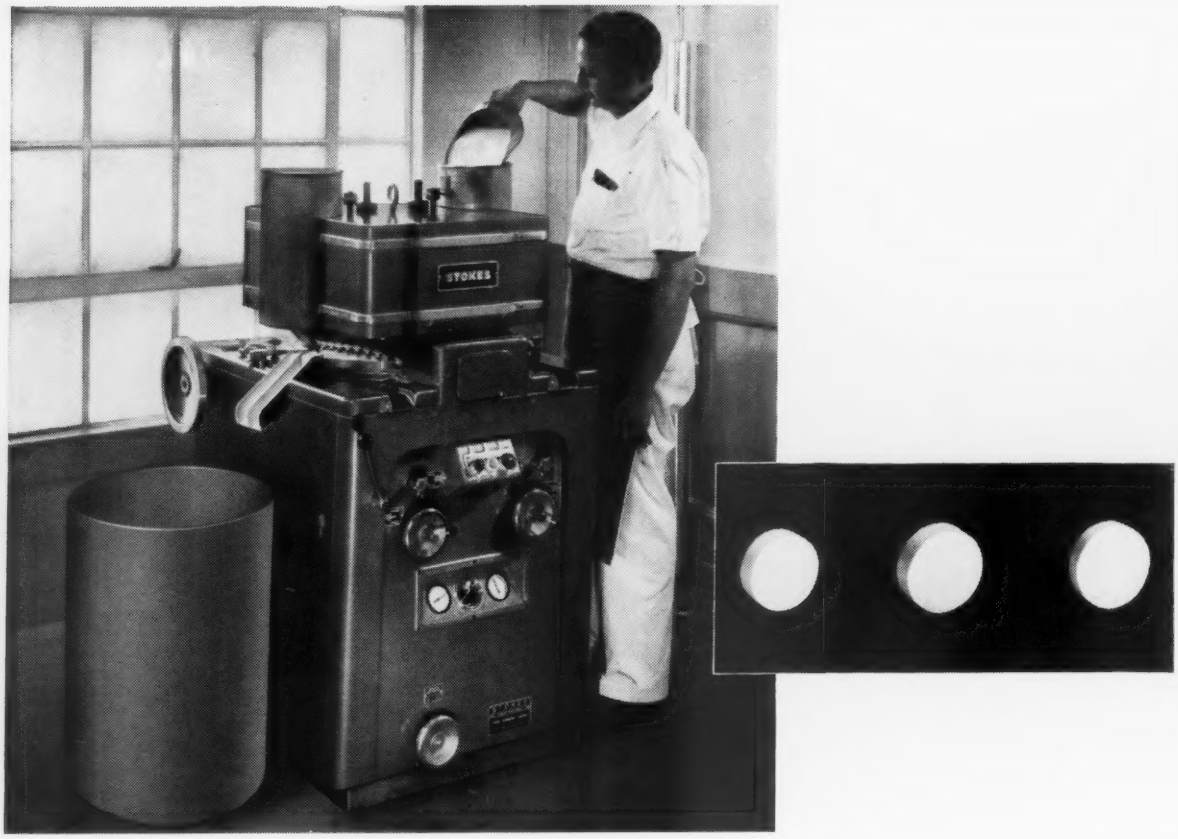

Stokes 551 Rotary more than doubles production rate for Norwich Pharmacal . . .

The Norwich Pharmacal Company, Norwich, New York, purchased their first Stokes Model 551 Rotary Tabletting Machine after making detailed comparative tests. Their selection was based on the superior production capacity of 4000 tpm . . . more than double the rate of their previous machines. In addition, the 551 also delivers greater product uniformity in the pressing of Norwich Aspirin and Norwich AAC tablets.

Since installation, the Stokes equipment has produced excellent results with only minimum routine maintenance. With Stokes' highly efficient design, and conveniently located centralized controls, perfect quality control is assured.

Stokes' Engineering Advisory Service will assist you in planning new or modernized tabletting operations, advise in matters of formulation and production. Complete specifications of the Model 551, or any of the pharmaceutical manufacturing equipment made by Stokes, may be had on request. Call or write—today.

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STOKES

Management Forum

BY FRANCIS CHILSON
INDUSTRIAL CONSULTANT

Applications Laboratory

Several years ago I made a lousy speech before the scientific section of the ADMA. The speech left everything to be desired but it did contain one important point which I am not sure was noticed by my distinguished audience. This point was simply that everything has another use somewhere somehow and that research men ought forever to be on the alert to the possibility of external uses. I mentioned as an example my conception of the use of antibiotics as deodorants. I tried to get a patent on this new use for antibiotics but failed because I didn't have a new composition of matter. (Probably I had a lousy patent attorney too). The thing that impressed me, after I had had an extensive patent and literature search made, was that all the workers in antibiotics were focused exclusively on the therapeutic uses of antibiotics in human and animal medicine.

In the light of this background I was impressed recently when I read in a Lilly house organ that this company had established an applications laboratory for the purpose of finding other uses for research products outside the pharmaceutical industry altogether. Although the laboratory has been in being but a couple of years it has already found several applications outside the industry for Lilly products or by-products. One of my clients claims to have discovered several hundred antibiotics which can't be used in therapeutics because they are all toxic. Accordingly they have been put upon the shelf as useless. But who knows what a multitude of uses these chemicals may have unless one skilfully looks for such uses?

It is strange that over the years the ideas of pure research and practical application have been more and more widely divorced. Yet it was the father of the scientific age, Francis Bacon, who said in 1624 in the preface to his Novum Organum, that the two disciplines of research and application should go forward together even though in separate channels. Said Bacon:

"Let there be therefore (and may it be for the benefit of both) two streams and two dispensations of knowledge; and in like maner two tribes or kindreds of students in philosophy—*tribes not hostile or alien to each other, but bound together by mutual services* . . . let there in short be one method for the cultivation, another for the invention, of knowledge.

"And for those who prefer the former, either from hurry, or from consideration of business, or for want of mental power to take in and embrace the other (which must needs be most men's case), I wish that they may succeed to their desire in what they are about, and obtain what they are pursuing. But if any man there be who, not content to rest in and use the knowledge which has already been discovered, aspires to penetrate further . . . I invite all such to join themselves, as true sons of knowledge, with me, that passing by the outer courts of nature, which numbers have trodden, we may find a way at length into her inner chambers."

The history of research is replete with re-discoveries of compounds that were shelved when first discovered but thrust aside because they did not suit the purpose then being pursued. Research has a tendency to become too narrowly channelized. For this reason it is good for research men to listen once in a while to the clamor of the market place and the wild ideas of dynamic salesmen. One research director told me recently that he had been doing research in the ethical section of his company for fifteen years without once having given a single thought to the needs of the proprietary side of the business. This is typical. On the other hand research men cannot be diverted too often or too long from their main pursuits or they will shoot off in all sorts of tangential directions and accomplish nothing. It does seem however that when

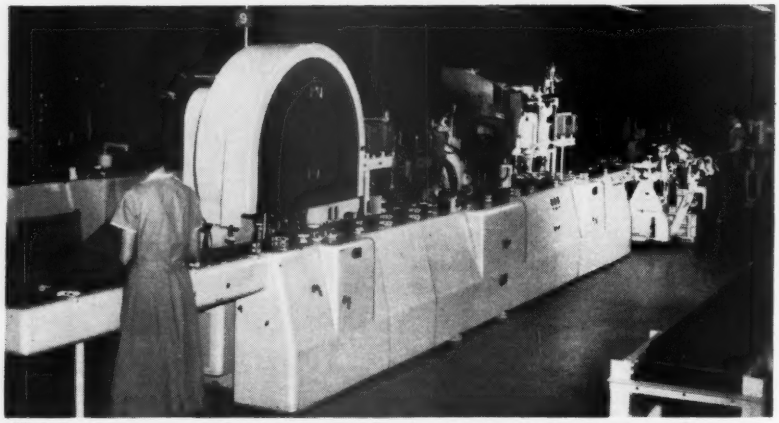
THE LEADERS LOOK TO PNEUMATIC

- New plants Pneumatic equipped
- Avon Products Inc., example
- More speed, flexibility provided

Where "modernization" is the order of the day, packaging is coming in for particular attention. More often than not equipment now in operation has been made obsolete by new design Pneumatic machines — developed for the faster, more efficient handling of dry, free flowing materials, as well as liquids and semi-liquids.

Pneumatic engineers have been exceptionally busy in the last few years, shattering previous standards of productivity through radically different approaches to the mechanics of packaging. Waste eliminating accuracies, and cost cutting speeds never before achieved, now feature the performance of the latest Pneumatic machines.

Leaders in their field — such as Avon Products Inc., makers and merchandisers of a line of nationally known cosmetics — are acutely aware of the absolute necessity to keep up-to-date in the all-important packaging phase of their production. In their sparkling new plant at Morton Grove, Illinois, their famous Avon Skin Freshener and Avon After Shaving Lotion, get the full treatment — from container cleaning right through filling, capping and labeling — on the very latest, fully synchronized high-speed Pneumatic lines. Without the slightest hesitation, on spaced centers to prevent jar or jostle from contact, the containers flow through the different stages as smoothly as oil through a pipe, with never a hand laid on them, from beginning to end.



High-Speed conveyor-synchronized bottling line in operation at Avon's ultra-modern plant in Morton Grove, Illinois.

Outstanding features of this equipment are the extreme gentleness with which it handles delicate, easily marred caps, and its easy adaptability to changes in container shapes and sizes. Within unusually broad limits, shifts from one to another may be made in short order — with minimum down time. Bottling will never be a bottle neck in this plant.

Keeping containers moving through the line with such automatic regularity and precision as to result in "lower cost per container" handling is a habit with Pneumatic machines. That, no doubt, is the reason why the country's leading producers have the habit of using them so extensively. Doubtless, also, it is the reason why so many other concerns "follow the leaders" to Pneumatic.

★ ★ ★ ★ ★

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a research man makes an unusual observation or runs into a new compound which is not useful to his purpose, he could make a special note of it and these notes could be saved either for the applications laboratory or for exploratory discussions at periodic bull sessions.

Great Discoveries

So many great discoveries have been made in our lifetime that unless one of them goes off with a helluva bang we don't pay much attention to them. But I can't help remarking about two discoveries which perhaps hold more ultimate promise for the human race than all the A and H bombs put together. (If the latter are misused there will not be any race to worry about.) I refer to the direct conversion of light into electricity and the direct conversion of heat into electricity. The former is being used with solar batteries to power telephone lines in Georgia. The latter is still a laboratory curiosity. But electricity has been made directly by heating a special gas-containing thermo couple to light a 60 watt lamp. The possibilities of these two discoveries fires the imagination.

Management Hoola Hoops—The Brain Pickers

In this column on many occasions and in many ways I have said that the biggest sucker in the world for any sort of phony management gimmick is the hard headed, hard working, practical American business man. He'll buy anything provided it has a fancy name, costs a lot of money and is the current fad. He has been milked of millions by efficiency experts, so called management "engineers," consulting psychologists and all manner of specialists in one racket or another. All these specialized "experts" have one thing in common—the less they know about your business or business *per se*, the higher are their fees. The less they give; the more they get.

The extent to which American business men can be bamboozled is indicated (but only in one field) in an article by Martin L. Gross, published in the March 1959 issue of True. By all means read this article and be sure it is read by your personnel manager and above all your president. In my book it should be required reading for all top management personnel and company directors as well. Gross' article deals with the serious dangers inherent in excessive personality and aptitude testing and all the rest of the hokum dished out by many consulting psychologists.

The psychological testing racket was started by a super-slick, super salesman who was out of a job. He had no particular academic training. He had none at all in psychology. But he came up with a gilded gimmick and, man! did he strike pay dirt! (Naturally he is now president of one of the largest of the personality and aptitude testing organizations.) And, he's a helluva salesman! He has sold a lot of the big corporations from General Motors to General Foods.

The response to this sort of psychological mumbo-jumbo is predicated on man's atavistic interest in having his head, feet, hands or stars read by one sort of medicine man or another. Many serious and important business men have also been known to consult crystal ball gazers, astrologers and all sorts of soothsayers about their business and personal affairs. Years ago there was a wealthy old bitch down in Wall Street who did a land office business predicting market movement for brokers and bankers. That was before the crash of '29!

The sad fact is that when a company president—such as a good friend of mine—gets sold on psychological mumbo-jumbo, he goes for it hook line and sinker and resents any aspersions on the omniscience of these charlatans. Every applicant for an important job in my friend's organization is required to answer elaborate questionnaires and take tests, which are then appraised by the headquarters staff of the consulting psychologist located 3,000 miles away! My friend's office is in the East; the psychologist's on the West Coast. Pretty good! Barnum said there's a sucker born every minute which, in the light of the success of the bump readers in seining suckers, is the under-statement of all time!

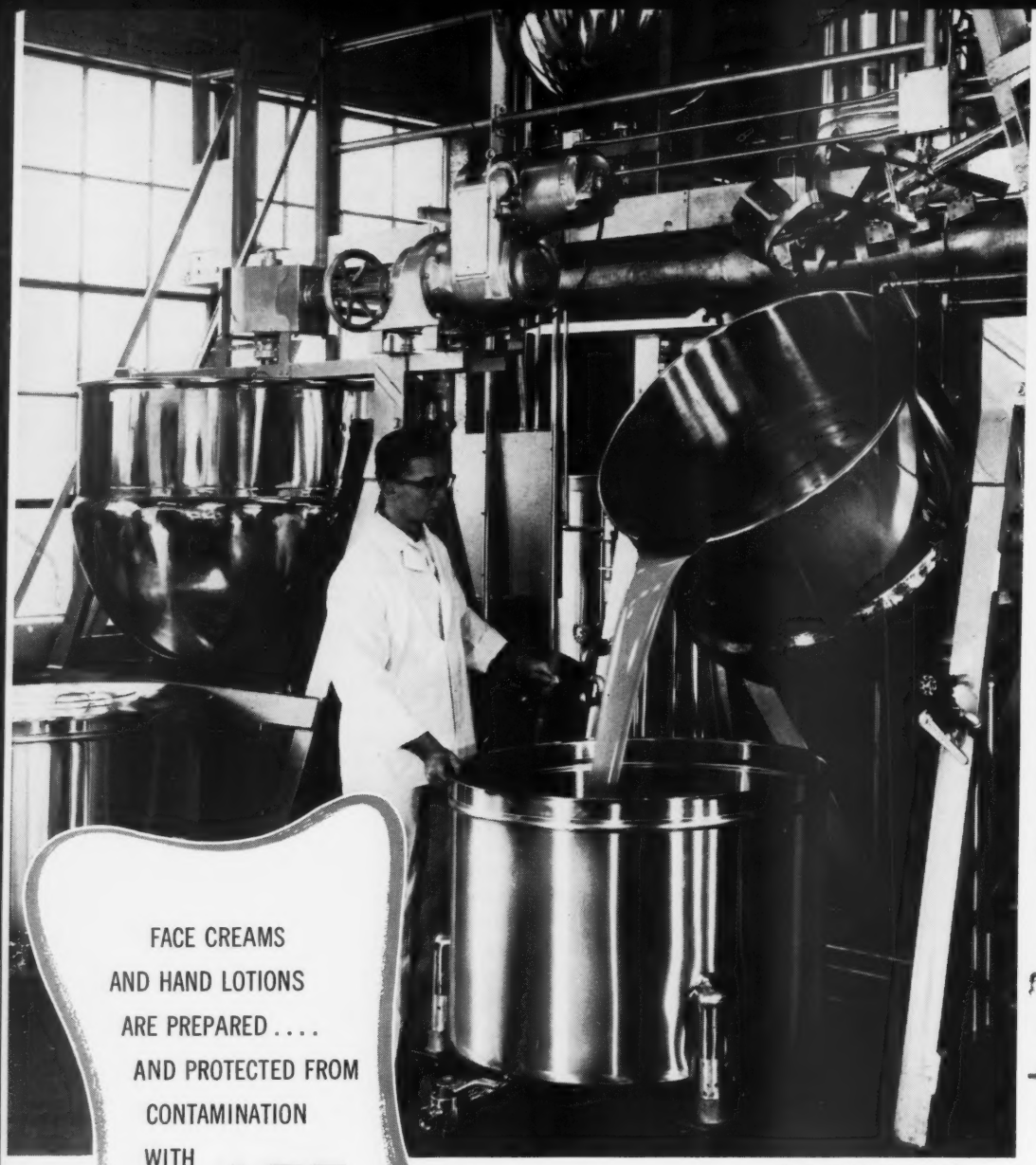
I became skeptical of aptitude testing when one of my clients received a report from an aptitude testing outfit that his star salesman was notably lacking in sales ability. Another time I saw the results on the same man from two different institutes. One report claimed he was almost a mechanical genius; the other that he had no mechanical aptitude at all. Both were wrong; he was simply a good salesman.

Reliance on these reports has frequently prevented the employment of exceptional men. It has caused the promotion of good men to be deferred or abrogated altogether. Such reports have often injured morale, and in final analysis, these reports are used as a means of developing a deadly uniformity and conformity in key personnel.

Nevertheless there is a modicum of good in simple aptitude and personality testing especially for lower case employees when it is not carried too far. I object to extremes that I think are dangerous. As a nation however, we tend to excesses and when any new fancy arouses our enthusiasm, we are for it hell for leather regardless of ultimate cost or consequences.

Tapered Drums

For the life of me I can't understand why the big chemical companies which use millions of pressed paper or fibreboard drums for shipment of the more valuable dry chemicals do not force the paper companies to manufacture tapered drums. Such drums would nest when empty and about 20 could be stored in the same cubic space now occupied by 3 conventional cylindrical drums. I have been in chemical



FACE CREAMS
AND HAND LOTIONS
ARE PREPARED . . . .
AND PROTECTED FROM
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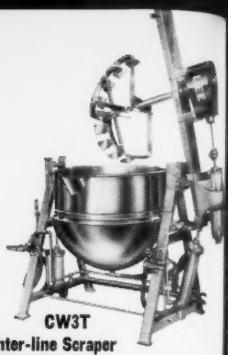
Courtesy of Charles of the Ritz

Assuring high quality control in the production of delicate creams and lotions, these Lee steam-jacketed stainless steel kettles are corrosion-resistant and easy to clean and keep clean.

Complete product mixing is obtained through the use of Lee double-motion center line scraper agitators, whose large stainless steel scraper blades continually move the contents from the heated walls toward the center, keeping an even temperature throughout.

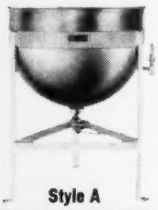
Lee hydraulic operated cylinders—using your present water lines—give perfect control and safety not only in tilting the kettles for pouring and cleaning, but also in raising and lowering the tilting agitators.

Descriptive bulletins for all of our specially-designed processing equipment available on request.



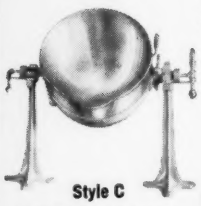
CW3T
Center-line Scraper Agitator Kettle
80 to 300 gal.

Quick Cooling Pan
50 to 200 gal.



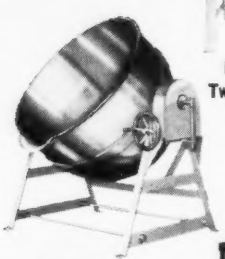
Style A
Two-thirds Jacketed
5 to 500 gal.

Style B
Full Jacketed
10 to 300 gal.



Style C
Two-thirds Jacketed
5 to 100 gal.

Pressure Kettle
Two-thirds Jacketed
40 to 200 gal.



Style CW
Two-thirds Jacketed
80 to 300 gal.

Pulp Tank
500 to 2,000 gal.

Mixing Tank
25 to
500 gal.

Storage Tank — 100 to

LEE

Technical bulletins fully describing these processing units gladly sent on request.

METAL PRODUCTS CO., INC.
408 PINE STREET, PHILIPSBURG, PA.

Designers and Manufacturers of Corrosion-Resistant Processing Equipment for over 25 years.

company warehouses and found literally acres of space taken up by empty drums. In the trade we reuse paper drums for tablet storage and handling and I have often wished I could find suitable tapered drums to cut down space usage when they are empty. It is possible to get small, tapered paper or fibre drums and also metal and fibre glass drums. But the cost is prohibitive. But if the chemical companies exerted pressure, they could force the paper companies to produce large tapered drums. These would save a lot of freight, space and handling charges and the savings would more than offset any increase in price that the drum makers might insist on.

Product Loyalty

If I could have for my estate the choice of any two products in the world, I would unhesitatingly select Lea & Perrins Sauce and Angostura Bitters. These products would ensure for my family and my descendants for generations to come a very large income, just as they have provided large incomes for previous generations of their owners. Both products are unique. Both products are unmatchable still in spite of millions of dollars spent by competing firms trying to duplicate them. Other sauces and spices will come and will go in the systole and diastole of time and change but these incomparable products will go on I'm sure forever.

It may seem heresy that I should choose two products outside the profitable pharmaceutical and cosmetic industries, with which I am so familiar, and from which my livlihood is taken. But my reason is that cosmetics in general have no consumer loyalty inherent in them. Once the transfusion of advertising dollars is stopped, sales don't slide downward; they plummet like a shot bird.

Proprietary pharmaceuticals in contrast have a long life once they become established. Even without advertising they continue to live for a very long time. The drug stores are filled with old timers you never read about any more: Gude's Pepto Mangan, Sloanes Liniment, Kilmer's Swamp Root. There are dozens of others on which not a penny has been spent for thirty or forty years. They can't be revived; but they can be milked.

Ethical drugs had a very short life. Five years is said to be average before research products become obsolete. In the ethical field however, there is a group of what the British rightly call 'ethical proprietaries' which can be bought over the counter without prescriptions and which have a very long and profitable life. Burrough's Wellcome's Empirin Compound for example. Since ethical proprietaries constitute about half or more of all ethicals sold it is a good thing for the ethical side of the industry that it has over-the-counter products. It would be a damned risky industry without them! Ethical proprietaries are of course never advertised to the public directly, but they have a word-of-mouth loyalty which keeps them going for a very long time.

These background comments have an important bearing on investments by individuals as well as institutions. It's a bloody pity one can't buy stock either in Angostura or Lea and Perrins. Perhaps that's another reason why these products and the companies that own them have lasted so long. The families that own the companies know they have gold mines and intend to keep their treasure hidden from prying eyes.

Now what makes these products so successful? For their purposes they are incomparable. They have a wide variety of uses. They have no seasons. They are used by both males and females in every age category from early teen age to old age. They are priced within the reach of every economic class. They have an unlimited shelf life and do not deteriorate when opened. They are easy to use and safe even for small children. Potentially they have a daily usage factor by both sexes and almost every age group.

Noise

The insidious enemy of efficiency is noise—noise of machinery, noise of traffic, noise of office equipment, clatter of tongues. People delude themselves into believing they get used to noise simply because they pay little conscious attention to it. But nevertheless noise hammers incessantly away at their eardrums, sapping their nervous energy and poisoning them with fatigue. We haven't done nearly enough to eliminate noise in the design of equipment or in sound-proofing working areas. Many offices and some packaging departments are sound-proofed to some extent. But sound absorbing materials are usually applied to ceilings only. It should be applied to walls too. Floors likewise should be sound-proofed to by using carpet. The floor is closest to areas of sound generation but floors, instead of being covered with sound absorbing materials, are usually made of hard, sound reflecting concrete or concrete covered with hard-finished tile. Carpeting is expensive of course but in the long run it is cheaper because of lower maintenance costs. Now that DuPont has made available carpet nylon with unbelievable wearing qualities, I'd like to see packaging departments carpeted with nylon carpeting of suitably dark color. I am convinced it would pay high dividends.

Noise has always been considered a curse, as the following quotations show:

"Noise: a stench in the ear. The chief product and authenticating sign of civilization."—*Ambrose Bierce.*

"And silence, like a poultice, comes
To heal the blows of sound."—*Oliver Wendell Holmes.*

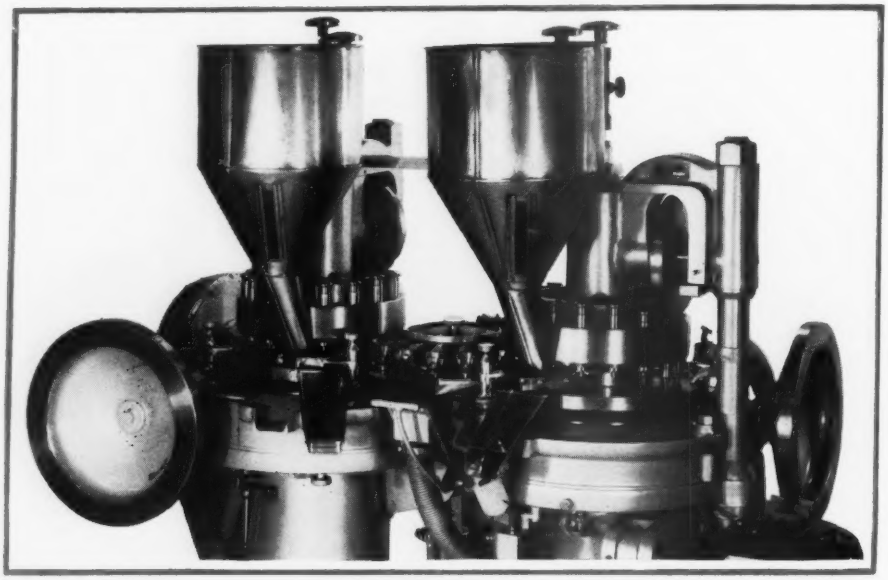
"What is odious, but noise?"—*Ralph Waldo Emerson.*

"Silence is beneficial not only to sanity, nervous equilibrium and intellectual labor, but also helps

DRYCOTA

MANESTY

DRY COAT – TABLET – SLUG – WITH ONE MACHINE



The DRYCOTA offers maximum flexibility to your tabletting department. It will produce **DRY COATED TABLETS**—either round or odd shaped – at rates up to 900 per minute without rehandling of cores.

The DRYCOTA can be converted to the production of **STANDARD TABLETS** – two sizes or formulations simultaneously – by the simple removal of the transfer arms in less than one minute.

The heavy duty construction of the DRYCOTA permits its use in the production of **SLUGS** with rates up to 1800 tablets per minute.

The increased flexibility of the DRYCOTA makes it virtually a complete tablet department in a single machine and permits the retiring of antiquated single purpose equipment.

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man to live a life that reaches to the depths and the heights."—*Pope Pius XII.*

"What a blessing it would be if we could open and shut our ears as easily as we do our eyes."—*Georg Lichtenberg.*

"Great science nobly labored
To increase the people's joys,
But every new invention
Seemed to add another noise."—*A. P. Herbert.*

Compiled by Paul Steiner for—The New York Times Magazine.

Cutter, Chopper, Grinder, Crusher etc.

A new perfected line of sawtooth crushers, trade-named Laptooth, assembled from standardized blade, shaft, spacer, housing, drive and cleaner-comb components to achieve extreme ranges of process-adaptability with minimum special design, is currently being introduced by Robinson Manufacturing Company, Clifton, New Jersey. The new line is evolved from the well-known "Unique" line which has served process engineers for six decades.

In the chemical industries units of the Robinson Laptooth type are used for such jobs as processing cork for tile or gasketing, presizing talc, asbestos, salts, soft ores, earths, phosphates and chunky materials before finish grinding and sifting, fragmenting filter cakes and pressed blendings (from aspirin to oil cakes to dynamite), reducing natural raw materials (from gums to roots and barks to bones to shells), sizing activated solids (alumina, silica or carbon), disintegrating materials which must be wet during reduction or handled with a minimum production of dangerous or troublesome fines, clawing materials which are plastic, elastic or malleable (resins, rubbers, flocks, mosses, pitches), and decreasing lump size and increasing area in materials to be heated, dissolved, leached, reconstituted or combusted (plastic molding scraps, coke and charcoal, catalysts and sintered compacts are examples).

Granular bagged materials which have caked or hardened in storage can be restored to original dry fluidity. Even ice and dry ice are shaved in such equipment.

To Hell With Water!

I always knew it was dangerous to drink water. But I knew this only by instinct and therefore, when a jackass of a doctor made me go on the wagon six months ago, I suspected, but wasn't sure, he was trying to kill me. Now I have scientific proof that he tried to make a hydrolic out of me—the bastard! The following report from The New York Times of May 17th shows what can happen to you if you don't keep your H_2O content at minimal levels:

"LONDON, May 15 (Reuters)—The trouble with 'hydrolics' is there is no way to tell when they have been sneaking drinks. Hydrolics are compulsive water drinkers. On an intake of thirty to thirty-five pints of water a day they act like alcoholic drunkards because of dilution of their blood. Their speech is slurred, they become giddy—and they get hangovers.

"The cases of seven women and two men were reported today by physicians at St. Thomas' Hospital here.

"The nine hydrolics suffer from psychological upsets. Most of them started drinking water heavily after they were 50 years old, but one woman said she had been addicted for twenty years.

The doctors try to take them off water; but they get it on the sly, and it is hard to stop a secret water drinker!"

Perhaps the mother in the old ditty was wiser than we thought:

Mother, may I go out to swim?
Yes, my darling daughter.
Hang your clothes on a hickory limb,
But don't go near the water!

New Self-Propelled Truck Freight Lift

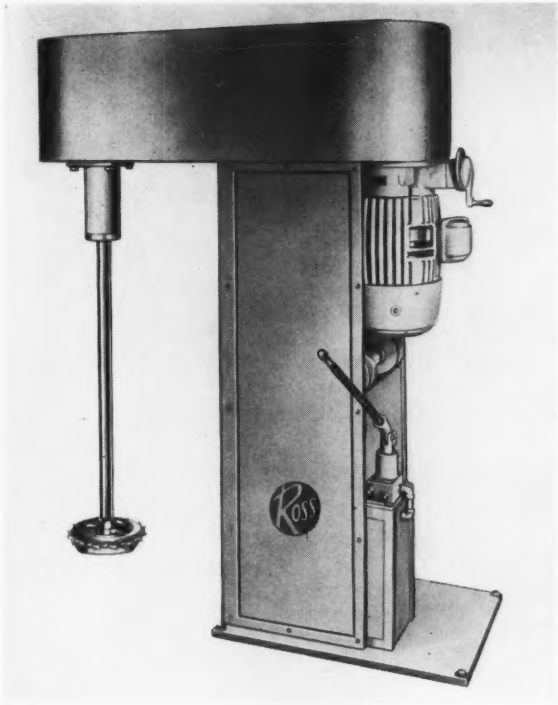
Seatrain Lines, Inc., 711 Third Avenue, New York City, and Travelift and Engineering Company, Sturgeon Bay, Wisconsin, have introduced a self-propelled vertical-lift, free-traveling crane for the terminal handling of truck freight containers.

The new device, which has complete mobility, is in effect the first "switching engine" of the trucking industry, according to Seatrain, and it will eliminate use of the highway tractor and trailer chassis for movement and storage of containers in terminal holding areas.

An adaptation of a lumber carrier, the lift, equipped with an airplane type tire, can straddle a trailer chassis, lift the freight container vertically, and then be driven to any point, without rails, special paving or tractor towing power.

The lift is hydraulically operated with power from a 56-horsepower air-cooled gasoline engine; can carry a 25-ton load at 10 miles per hour; and can be handled entirely by one man. Built of heavy steel, it is 24 feet long, almost 20 feet high and can straddle a trailer and container 9 feet wide.

KEEP YOUR POWDER DESERT-DRY WITH LECTRODRYER When you're processing powdered or granular hygroscopic materials, Lectrodryer is the solution to air moisture problems. These machines dry air to dewpoints as low as —110°F. You can choose automatic or manually controlled units, for continuous or intermittent operation. Tell us about your drying problem — we'll advise you how Lectrodryer custom-engineered or standard units can help you. *Write Pittsburgh Lectrodryer Division, McGraw-Edison Company, 309 '32nd Street, Pittsburgh 30, Pennsylvania.*



New High-Speed Disperser

A new and improved high-speed Disperser has been developed by Charles Ross & Son Company, 148-156 Classon Avenue, Brooklyn 5. The machine's especially designed multiple-action impeller or millhead effectively mixes, disperses, dissolves, emulsifies and deagglomerates most liquid, paste or heavy paste materials.

The machine has four different actions. Material is drawn into the millhead and thrown at high speed against baffles; pumped through a very narrow orifice; subjected to sawtooth cutting by teeth around the periphery of the millhead; and jetted out laterally in a very thin stream at speeds up to 120 miles per hour through the slower moving surrounding material for maximum hydraulic shear.

The Disperser can be used in tanks or containers from standard 55-gallon steel drums to tanks 40 inches in diameter and 45 inches deep. The millhead is readily raised from the tank by simple hydraulic jack. Speed can be varied from 2059 FPM to 10,323 FPM. The stainless steel shaft and millhead are standard, and the millhead can be readily cleaned.

This Disperser is also available in laboratory or very large production sizes.

Tablet Inspector, Chip and Powder Remover

Popper & Sons, Inc., 300 Fourth Avenue, New York City 10, have developed a PerfeKtum Tablet Inspector, Chip and Powder Remover, Model TL-6. It enables one operator to perform a thorough visual inspection of tablets on both sides. The cyclone-type unit removes undesirable chips and powder while tablets pass over two removable perforated plates, and facilitates inspection of from 50,000 to 150,000 tablets or capsules per hour.

Bulletin #359T supplies additional information.

Automatic Lidding Machine for Set-Up Boxes

The Charles Beck Machine Corp., Church Road, King of Prussia, Penna., has developed a fully automatic, high-speed machine for closing filled or empty set-up boxes, which reduces over-all production costs.

For users, the Lidder offers automatic closing "in-line" with the filling operation; for the manufacturer, the Lidder is used "in-line" with box wrapper or quad stayers. It offers quick adjustability without the use of tools. Built on casters, it can be locked into operating position with a touch of the foot. The Lidder handles boxes from 1¼ X 1¼ X ¼ to 22 X 14½ X 4½ inches.

Variable-Speed Tablet Coating Stand

A new Colton Model 16VS motorized coating stand with a variable speed drive that permits selection of proper tablet coating-pan rotational speeds is now available from Arthur Colton Company, 3400 E. Lafayette, Detroit 7, Mich.

The stand features a totally enclosed, 1 h.p. motor with a variable speed unit providing coating pan speed variations from 12½ to 31 rpm., which makes possible proper speeds to suit operating variables such as pan load or pan size. The machine is also adapted for pilot plant or production laboratory operation where proper pan coating speeds are necessary.

A hinged louvered cover at the rear of the one-piece welded steel base provides ventilation for drive components and accessibility for speed adjustments. A sight guage shows oil level in the speed reducer unit, and the starting switch is foot-operated.

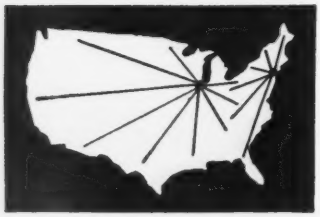
The base occupies floor space 28 by 36 inches. The stand is 43 inches high and accommodates coating pans up to 42 inches in diameter.

GET THE FACTS ABOUT THE MANY ADVANTAGES OF G. BARR & COMPANY TWO-PLANT AEROSOL PACKAGING SERVICE

In New York—as in Chicago—you can enjoy the outstanding research, product development and precision aerosol packaging service of a G. Barr & Company *local* plant and also share in the *many advantages* of G. Barr & Company *two-plant* operation.

Among these advantages are the potential savings in both shipping and production costs. You also enjoy the benefits of our unsurpassed laboratory facilities, of our two-plant buying power, our time-tested quality controls and the important know-how gained over the years in the production of hundreds of millions of aerosol packages.

There are many other important pluses which *only* G. Barr & Company can offer. We would like to tell you about them, at your convenience and without obligation. Just contact our nearest office for facts.



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American Sterilizer installation of large rectangular autoclave with automatic control for carboxide gas sterilization of heat- and moisture-sensitive materials. Routine sterilization with pressure steam is also accomplished automatically in this unit. Other equipment available ranges from the 16"x16"x30" self contained *Cry*-O-Therm to 60" x 66" x 120" single- or double-door models.

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As long as ten years ago, American Sterilizer researchers settled upon Ethylene Oxide (inerted with suitable diluents) as the agent of choice for the rapid and dependable sterilization of heat- or moisture-sensitive materials. Advances in such varied fields as pharmaceuticals, surgical supplies and packaging have greatly broadened the range of applications for which this versatile sterilizing agent is recommended. But they have also clearly signaled the need for a precise relationship between such factors as temperature, humidity, pressure, exposure, concentration and diluents in effecting optimum conditions for each specific application.

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Our ten year study of the characteristics of Ethylene Oxide has been paralleled by an equally thorough development of instrumentation. As a result, American Sterilizer techniques and installations are successfully serving an ever-widening range of industrial and commercial processes requiring the sterilization of heat- and moisture-sensitive materials.

Because we have accumulated the largest body of data and experience in this field, we can advise you authoritatively. Because we offer the broadest range of automatic equipment for standard or special application you enjoy significant benefits of economy and continuing efficiency.

SEND FOR THIS FREE BASIC LITERATURE

Basic literature on "Ethylene Oxide Sterilization for Industry" is available upon request. Engineers of our Scientific Division are "on call" for consultation on processes, techniques or packaging and Experimental and Pilot Plant facilities are available through our Research Division.

Write for Bulletin 1C-602

AMERICAN STERILIZER
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Scientific Division

Perfumer's Shelf

American Society of Perfumers

The Fifth Annual Open Symposium of the American Society of Perfumers had as its theme "Instrumentation and the Perfumer." In order to familiarize the audience with the instrumental methods which have recently been introduced into the perfume industry, a brief review was given by *E. Fearns* of the principles and application of spectrophotometry (visual, ultraviolet, infrared and near infrared) and gas chromatography. In the short span of five years, the new technique of gas phase chromatography has become a valuable tool for the assay of distilled materials according to *F. Lohman*. With relatively inexpensive and simple equipment, it is oossible to obtain comprehensive chemical data in a short period of time. It is especially significant that this objective data correlates to a remarkable degree with subjective odor evaluations. Several problems involving perfume raw materials have been easily solved through the joint efforts of gas phase chromatography and the perfumer. These involve such important items as ionones, terpineol, geraniol, citronellol, and citronella formosa. Certainly, through this joint effort, many serious problems confronting perfumery can be more easily solved in the near future.

It is common practice in our industry to use organoleptic and instrumental methods side by side in the evaluation of aromatics, according to *J. S. Jellinek*. This offers some definite advantages, but difficulties arise in cases where highest chemical purity is not accompanied by highest quality as an odorant. In these cases a choice has to be made whether the nose or the instruments should have the final say in accepting or rejecting the odorant. Arguments can be advanced to support either choice; on the whole, the industry has not yet taken a definite stand on this issue. In the author's opinion, the producers of mass consumer goods (detergents, soaps, etc.) will place increasing emphasis on chemical and physical specifications, while the producers of luxury products will continue relying primarily on the nose in the evaluation of their perfumery materials.

Instrumental techniques enchance the role of the perfumer and should be a challenge in his work, in the opinion of *V. D. Johnston*. The use of the ultraviolet and infrared spectrophotometer and the gas-liquid chromatograph in analytical work were discussed. Some examples of how each instrument has been combined with odor evaluations were given.

Instrumental methods of analysis, when applied to perfumery, raw materials and finished compounds, are at best supplementary in their present stage of development according to *H. Cuttler*. While, undoubtedly, a valuable aid to the perfumer in problems of analysis and synthesis of odorous materials; for the ultimate evaluation then is no substitute for the experienced nose of a perfumer.

Rosaceae

The Rosaceae are a large family of herbaceous plants, shrubs and trees, comprising some 100 genera and upwards of 2,000 species. Many of the plants of this order are remarkable both for the beauty of their flowers, many of which have a delightful fragrance, and for the variety of their sweet edible fruits —the blackberries, raspberries and strawberries, as well as apples, pears and quinces, apricots, nectarines, plums, peaches and cherries and are discussed by E. S. Maurer (*S.P.C.* 32: 410, 1959).

This order, because of its magnitude, presents a major study for the perfumer, for apart from the commonplace scented blossoms, there are quite a number of unsuspected and intriguing floral-herbal nuances to be discovered.

Poterium sanguisorba is the Small or Upland Burnet. This herb was also used in the salad bowl, for its bruised leaves have a flavor very similar to that of the cucumber. If oil of Peru balsam is mixed with a little spearmint and a trace of marjoram added, this gives a close approach to the odor of bruised burnet leaves.

This genus may conveniently include *Sanguisorba officinalis*, the garden or salad burnet, and *S. Canadense*. The aromatic folial nuance of these plants would perhaps suggest a breakaway from the conventional approach to Chypre, fougere, heather, peat and tweed and similar sophisticated scents.

Alchemilla. There are several species of this genus. Probably the most familiar British species is *A. vulgaris*. The fresh root of this herb, likewise rich in tannis, has a peculiar earthy-galbanum odor and is another erstwhile rural styptic. *A. arvensis* commonly known as Parsley Piert, is worth consideration, for piert (meaning pert or lively) refers to its rapid cleaning action internally. This, combined with its outstanding astringent properties, might make its external use in cosmetics similar but superior to that of witchhazel as a skin tonic, freshening and cleansing agent.

Agrimonia. The spikes of little "yellow roses" of several varieties of *Agrimonia Eupatoria*, develop an unsuspected fragrance suggesting a liaison of jasmin and apricot, and somewhat reminiscent of the odor of benzyl propionate. The larger flowered companion, *A. odorata*, has a similar but more spicy scent. These redolences appear somewhat stronger and more resinous in the E.

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Indian *A. nepalensis* and the N. American *A.* suaveolens.

The Prunus sector is a large and important division, for it includes such fruit-yielding trees as *P. armenica* (Apricot), *P. cerasus* (Cherry), *P. Persica* (Peach), *P. domestica* (Plum); and such handsome trees as the Almond (*P. amygdalus*), the Wild Cherry or Gean (*P. avium*), the Bird Cherry (*P. padus*); *P. laurocerasus,* the Common or Cherry-laurel, *P. lusticana,* the Portugal Laurel, *P. cerasifera,* the Myrobalan or Cherry-plum, and *P. spinosa,* the Sloe.

Initial attention is directed to the *Amygdaleae* or Almond group.

Prunus communis var: *dulcis* and var: *amara,* yield respectively the sweet and bitter almonds of commerce. The bitter almond, in addition to the fixed oil, also yields an essential oil consisting largely of benzaldehyde, but contaminated with up to 7 per cent of hydrocyanic acid.

The strongly aromatic benzaldehyde will be seen to appear elsewhere among the *Rosaceae.* Its genesis depends upon an enzyme decomposition of a glucoside—a mechanism which is also observed among the Spireas and Astilbes though the odorophore in the latter cases is the *ortho*-hydroxy derivative of benzaldehyde, more familiar as salicylaldehyde.

The almond flavor finds wide use in Continental *patisserie* and *confiserie* of the macaroon and marzipan class, as well as in the many Ratafia essences used in brandies and liqueurs of the Kirsch type.

The natural sweetness-confrerring element among many hothouse and tropical fragrant blossoms may, in a general way, be traced to and duplicated from various proportional permutations upon almond, hawthorn, heliotrope and vanilla, selecting, for example, a preliminary combination in the ratio of 3 : 2 : 1, of the following:

(1) Almond, hawthorn, heliotrope.
(2) Almond, hawthorn, vanilla.
(3) Almond, heliotrope, vanilla.
(4) Hawthorn, heliotrope, vanilla.

all of which are variations upon the "Cherry Pie" theme.

The introduction of the cinnamon and/or clove *motif* engenders some intriguing nuances.

Although sweetness-complexes may be regarded as the subordinate nuance of many tropically indigenous blossoms, the dominant note is usually a variation upon clove-neroli, clove-bergamot or neroli-bergamot.

The scent of blossoms of Plum or Almond trees embodies a foundation of eugenol and a honied, neroli-rose complex, sweetened with the (4) hawthorn, heliotrope, vanilla base, and etherealized by a light touch of ylang.

Peach Blossom was composed of orange flower and jasmin extracts, lemon oil and a little essence of almond and a trace of Peru balsam, this giving a remarkable simulation of the living blossom. The redolence of heliotrope is the key to Cherry Blossom and, in its elementary form, this merely requires the addition of 2 per cent of vanilla essence to an extract of White Heliotrope based upon heliotropin, neroli and bergamot and finalized with a trace of bitter almond oil.

For the Bitter Almond perfumes suitable for soaps, shaving creams, hand lotions and depilatories, the student will observe how the balsams and essential oils employed restrain undue oxidation of the benzaldehyde, also the union with such oils as cassia and sandalwood elevates the compound above the level of a cooking flavor.

Coffee Aroma

The aroma of roasted coffee is a combination of more than 30 volatile components, isolated by A. Zlatkis of the University of Houston and reported to the Division of Agricultural and Food Chemistry at the 135th National ACS meeting in Boston. The compounds were isolated and identified by gas-liquid chromatography and mass spectrometry. A high molecular weight fraction is still to be analyzed and this probably contains more compounds than the essence fraction. The lower volatility has made mass spectrophotometry difficult, but current developments in gas chromatography, using ionization detectors and capillary columns, should be helpful.

M. Sivetz, now with the Cafe Soluble de Nicaragua and with J. A. Folger and Co. at the time of the study, prepared a mixture of the components identified with the aroma essence fraction and found the resulting aroma to be similar to that of the original natural essence. J. H. Sullivan, of the U. S. Army Quartermaster Research and Engineering Center (QREC) in Natick, Mass., reported that 23 compounds have so far been identified by the use of an analytical mass sprectrometer with gas chromatography and high vacuum techniques.

The aroma essence contains the following: acetaldehyde, 19.9 per cent; acetone, 18.7 per cent; diacetyl, 7.5 per cent; n-valeraldehyde, 7.3 per cent; 2-methylbutyraldehyde, 6.8 per cent; 3-methylbutyraldehyde, 5.0 per cent; methyl furan, 4.7 per cent; propionaldehyde, 4.5 per cent; methyl formate 4.0 per cent; carbon dioxide, 3.8 per cent; furan, 3.2 per cent; isobutyraldehyde, 3.0 per cent; pentadiene 3.0 per cent; methylethyl ketone, 2.3 per cent; C4-C7 paraffins and olefins, 2.0 per cent; methyl acetate, 1.7 per cent; dimethyl sulfide, 1.0 per cent; n-butyraldehyde, 0.7 per cent; ethyl formate, 0.3 per cent; carbon disulfide, 0.2 per cent; methyl alcohol, 0.2 per cent; methyl mercaptan, 0.1 per cent; thiophene, 0.1 per cent. Dry vacuum aroma volatiles include methyl formate, ethyl formate, methyl acetate, formic acid, acetic and propionic acids, water, acetone, methylethyl ketone, C6 ketones, ethyl alcohol, n-butyraldehyde, isobutyraldehyde, C6 aldehydes, furfural, furfural derivatives and C5 esters.

Sweet Marjoram Oil

The sweet marjoram oil distilled in Bulgaria is of high quality on the whole according to *St. Ilieva and G. Zolotovitch* (*P.E.O.R.* 50: 300, 1959). Its characteristics are close to those reported by Gildemeister and Hoffmann.

The oil distilled from plants dried, both in shade and in direct sunshine, differs from the oil produced from freshly cut plants in a higher acid number and increased specific gravity. That is the case with most of the essential oils produced from dried plants in general. The oils produced from fresh marjoram plants show a higher solubility in alcohol.

The oil of *Marjorana hortensis* Mnch is mainly used in the food industry usually in luxurious preparations, when price is not taken into consideration. For cheaper products the comparatively cheaper oil of Spanish wild marjorana (*Thymus mastichina* L) is used although it possesses a marked cineole odor.

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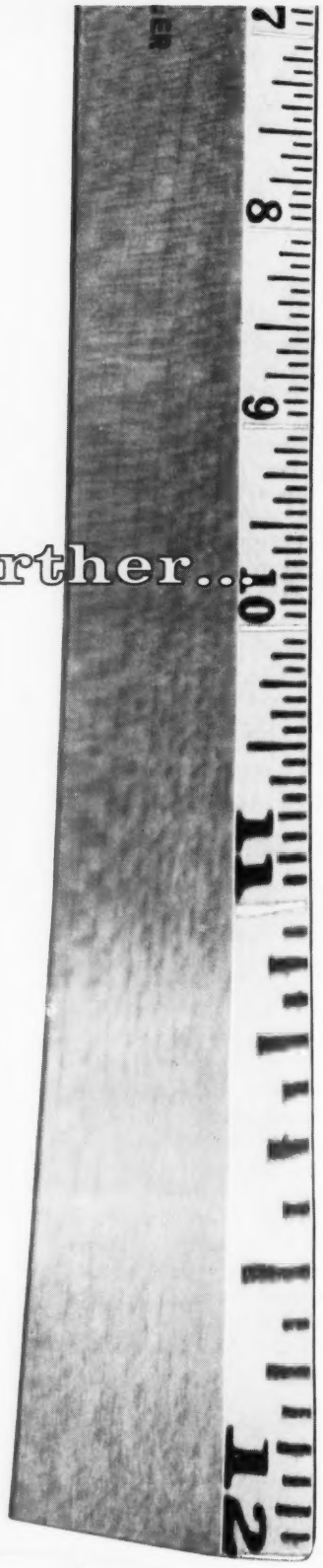

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Compounder's Corner

Sunscreening Compound

U. S. Patent 2,874,090 has been issued to David X. Klein and assigned to Heyden Newport Chemical Corp. This protects the use of a compound, N-salicoyl-p-aminophenol, in cosmetic sunscreening preparations. According to the specifications, a sunscreening agent should filter out most of the actinic rays in the region of 2950 to 3150 A.U. while allowing passage of most of the rays in the region of 3150 to 3650 A.U. The shorter wave lengths cause burns while the longer ones promote tanning. The screen should also be effective for at least four hours, since many compounds with the desired absorption properties undergo deterioration when exposed to ultraviolet light. Anesthetic or therapeutic action on the skin should be absent and the compound must not be an irritant or sensitizer. Finally, it should be soluble in oily and non-oily solvents so that it can be readily incorporated in cosmetic preparations. These qualities are possessed by the salicoyl compound. Tests indicate that it is effective in lower concentrations than other screens in comparative tests, and concentrations between 0.4 and four per cent are suggested.

Lipsticks

Lipsticks should be non-injurious, pleasant-tasting and perfumed, be easy to apply, color the lips uniformly to the desired intensity in a given shade, should give a smooth appearance to the lips and feel smooth, provide some protection from the weather but without appearing heavy and thick, not crumble or crack in containers or during use, have a high luster and be able to add this luster to the lips. There should be minimum transfer of color and lipstick mass from the lips to other objects on contact and color should be permanent enough to minimize the need for reapplication. Moreover, the color of the lipstick should be uniform in that the mass color and the color on the lips should be very similar if not identical.

Two general types of lipsticks are current: the standard product and the super-stain type. In the first, pigments are carried in the stick mass, which consists of a mixture of waxes and oils to give a stick with desired physical properties, and the staining dyes are dissolved in the oily components. For the so-called permanent lipsticks, a glycol or glycol derivative which is not miscible with the waxes and oils is used as a solvent for the staining dyes. Staining of the lips by the standard lipstick is usually not very pronounced; the super-stain lipstick must be applied to the lips and the excess removed by blotting. The stain left is relatively intense but practically all of the protective and emollient portion of the lipstick is removed by blotting; If the lips are not blotted, color is very easily transferred from the lips to drinking glasses, towels or cigarettes.

Amino Acid Emulsifiers

A new series of emulsifiers for laboratory investigation has been annouced by General Mills Research Laboratories. These are the salts made by combining amino acids with fatty acids and they have the additional interesting property of being antioxidants and retarding the oxidative rancidity of fatty acids. Most of the salts are solids and excellent emulsifiers and surface tension properties will vary according to the chain length of the fatty acid.

Solubilizing Oils

I. I. Lubowe, in U. S. Patent 2,865,859, describes a means of dissolving mineral, vegetable and animal oils in low molecular weight alcohols by the use of certain coupling solvents. These solvents are ethyl, propyl, isopropyl, butyl or amyl esters of lauric, myristic, stearic, oleic, linoleic or ricinoleic acids. The clear solution may consist of 20 to 50 per cent of the oil to be solubilized, 20 to 50 per cent of the low molecular weight alcohol, and 5 to 20 per cent of the ester or mixture of esters. Numerous cosmetic applications are suggested for these solutions.

Shampoo Patent

Improved soapless shampoos are described in U. S. Patent 2,874,126 issued to S. Epstein, C. F. Fuchs and M. M. Gladstone and assigned to Emulsol Chemical Corporation. These shampoos consist of surface active agents singly or in combination along with an additional agent consisting of amides of isopropanolamine with liquid higher molecular-weight fatty acids such as oleic, linoleic or linolenic acids or mixtures of the acids. The detergent or mixture of detergents will be from eight to 30 per cent of the mixture, usually between 15 and 25 per cent; the amide concentration may be from one to six per cent, usually betwen two and five per cent.

The resulting shampoo is said to make the hair more manageable and the cloud point in clear shampoos is lowered.

Iridescent Magic Lipstick (Factor) is available in white, "Essence of Pearl," pale gold "Golden Frost," rose-pink "Petal Frost," pink-rose "Flamingo Pearl," apricot-orange "Apricot Frost," "Orchid Pearl" and suntan-mauve "Desert Pearl." The lipsticks contain a special ingredient to impart true iridescence.

(*Continued from page 725*)

curriculum at the Graduate School of Business Administration at New York University.

S. L. Mayham, TGA Executive Vice-President, before an open meeting, discussed the problems brought about by the FDA proposal to delist a number of coal-tars essential in modern lipstick manufacture.

Dr. Paul G. I. Lauffer of the Northam Warren Corporation, at the luncheon on the day of the Scientific Section Meeting, was presented with the CIBS annual award by the CIBS President, John Duncan, of Hazel Atlas Glass Division of Continental Can. The award is presented for the best paper appearing in the Proceedings of the Scientific Section of the TGA during the year.

The Scientific Section meeting was under the Chairmanship of J. C. Ervin of Procter & Gamble Co. **S. B. Mecca** of Schuylkill Chemical Company discussed *Allantoin and the Newer Aluminum Allantoinates.* It is possible to prepare various therapeutically effective salts of allantoin, such as the aluminum allantoinates, which combine the astringent and bacteriostatic properties of aluminum with the salutary attributes of allantoin.

Considerable clinical and laboratory study discloses that both aluminum chlorhydroxy allantoinate and aluminum dihydroxy allantoinate are non-irritating, non-toxic, non-allergenic and non-sensitizing even under the severest test conditions.

Extensive clinical studies also show that this complex is an efficacious adjunct in acne preparations as well as after-shave lotions or body lotions. These studies indicate that aluminum chlorhydroxy allantoinate exerts astringent, bacteriostatic, keratolytic and reparative action when utilized in various dermatological preparations.

Dr. Herbert J. Spoor reported on *A Quantitative Clinical Method for Comparing Antidandruff Agents.*

A panel type of clinical study sufficiently selective to differentiate betwen diverse antidandruff agents has been developed. Both dermatological examination criteria and laboratory measurement of specific entities are utilized to obtain quantitative data.

Dr. O. Jacobi of the Kolmar Research Center presented a paper *About the Mechanisms of Moisture Regulation in the Horny Layers of the Skin.* (See page 732.)

J. H. Draize, A. A. Nelson, S. H. Newburger and E. A. Kelley of the Food and Drug Administration reported their results on *Inhalation Toxicity Studies of Six Types of Aerosol Hair Sprays.* (See May issue, page 592.)

Dr. Paul G. I. Lauffer of Northam Warren Corp. discussed *Olefaction and Cholinesterase.*

Substances, to produce sensations of odor, must enter the nose and come into intimate contact, by a process roughly described as "adsorption," with surfaces of the mucous membrane of the olfactory region. This concept leaves at least three important questions unanswered: 1. After contact, what happens to generate a nerve impulse? 2. What is the structure of the olfactory membrane? 3. What molecular features of the odorant determine how it will be adsorbed and what sensation it will produce?

Recent studies in several types of biological specificity have emphasized the necessity of considering the three-dimensional distribution of charges and attractive forces in predicting specific attraction.

Several biological effects have been explained on the basis of action on cholinesterase, a participant in nerve conduction.

E. J. Stravrakas of Fabric Research Laboratories presented his paper, *Comparison of Curl Strength of Tresses Treated with Water, Hair Sprays and Waving Lotion.*

Determinations of the energy necessary to remove curl from tresses treated with water, hair sprays, and thio solutions have been made under standard atmospheric and high humidity conditions.

This measurement of energy has been termed the "curl strength," and comparisons of the percentage change in curl strength due to application of hair sprays and thio treatments are reported as a function of the curl strength in the water waved tress. Significant differences have been observed.

In Vitro and Use Tests for the Evaluation of Degerming Agents was the subject of the paper by **Harry L. Rubenkoenig and Paul A. Majors** of Hill Top Research Institute.

Antibacterial agents which form an active residual deposit on the skin, and thereby reduce the numbers of bacteria present on the skin, are coming into constantly wider use in soaps, cosmetics and related products. *In vitro* methods of evaluation of effectiveness afford some guidance in the early stages of development, but leave considerable uncertainty about the important question of activity and durability of the deposit of the agent left on the skin after use.

Convenient pilot tests on the skin of rabbits are described, which can predict the bacteriostatic and bactericidal activity of the deposit resulting from use of the product, its resistance to washing or its build-up with repeated use, and its depth of penetration relative to that obtained with a reference material.

For final evaluation, tests on human skin are needed. Conventional hand-washing counts may be used on appropriate products. A method of evaluating facial preparations by bacteria counts on the cheeks is presented. Deodorant soaps and axillary deodorant preparations can be evaluated most practically by controlled periodic odor evaluations.

J. W. Jenkins and J. M. Amburgey of Colgate-Palmolive Company reported on *Determination of the Volatile Constituents of Aerosols by Gas Chromatography.* •

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Trade Literature

Liquid Handling Equipment

Ertel Engineering Corp., Kingston, N. Y., has published a new, profusely illustrated bulletin showing the many types of Ertel filter sheets and filtering equipment. Bulletin 58 includes application tables, flow rate and filtration area charts, and describes bottle fillers, pumps, and mixers for chemical, drug, cosmetic and other industries.

Tissue Culture Apparatus

Bulletin TC-3 has been issued by Kontes Glass Company, Vineland, N. J. Its 12 pages describe a complete line of durable, precision-made apparatus for tissue culture experimentation, with illustrations, and include several new items, among them a Carrel Flask with optically ground and polished windows for observation by phase microscopy; a "Duall" Tissue Grinder that homogenizes materials from liver to skeletal muscle; and the Disintegrinder, a Teflon pestle homogenizer with an integral cutting blade.

New Synthetic Aromatics

Volume 3, No. 1 of Roche Aromatics has been made available by the Aromatics Division, Hoffmann-La Roche Inc., Nutley 10, N. J. The 12-page booklet describes in detail the company's new products for the perfumer created by total synthesis. The publication also contains a technical discussion of both the gas chromatography and infrared spectrum of ethyl linalool, a new aromatic which has never before been offered commercially.

Glass of All Varieties

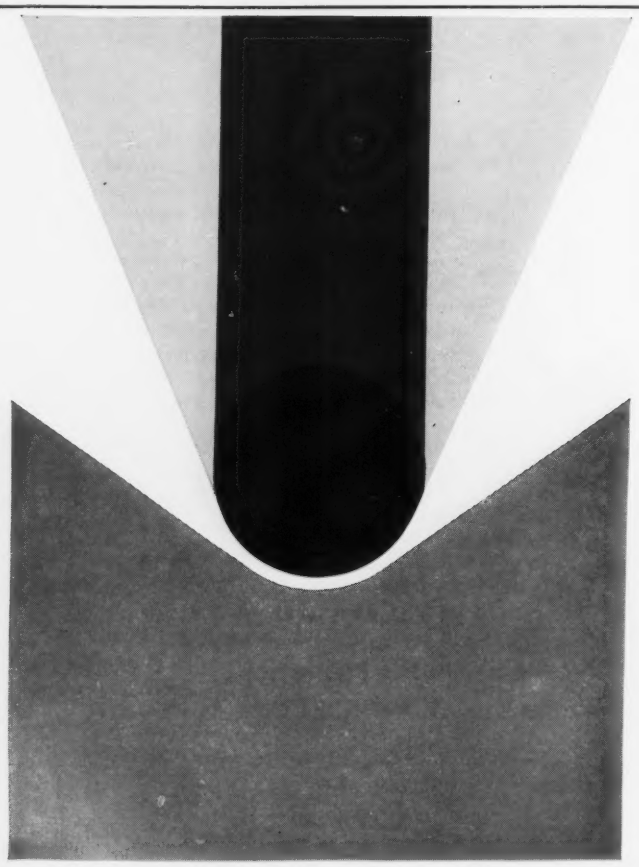
Glass Containers 1958 is the title of an attractive new 60-page booklet from the Glass Container Manufacturers Institute, Inc., 99 Park Ave., N. Y. 16. It provides a description of the glass industry through 1958, both as a whole and according to end-use, with charts on shipments and a discussion of closures.

Polyethylene Film and Bags

The U. S. Industrial Chemicals Company, Division of National Distillers and Chemical Corp., 99 Park Ave., N. Y. 16, has published a technical bulletin, Formulas and Tables for Polyethylene Film and Bags, which provides a series of convenient formulas and tables for computing bag and film measurements, in eight pages. The formulas take into account such variants as film width, gauge and density. Conversion tables for the metric system are included.

Cellophane Bundling

A 12-page brochure, Cellophane Bundling, has been issued by the Market Development Department, Film Division, American Viscose Corporation, 1617 Pennsylvania Blvd., Philadelphia 3. Describing the advantages of cellophane over bulky, opaque wrapping materials in bundling operations, the brochure also tells how cellophane bundling permits more effective distribution of a product, as well as savings in packaging and distribution costs.



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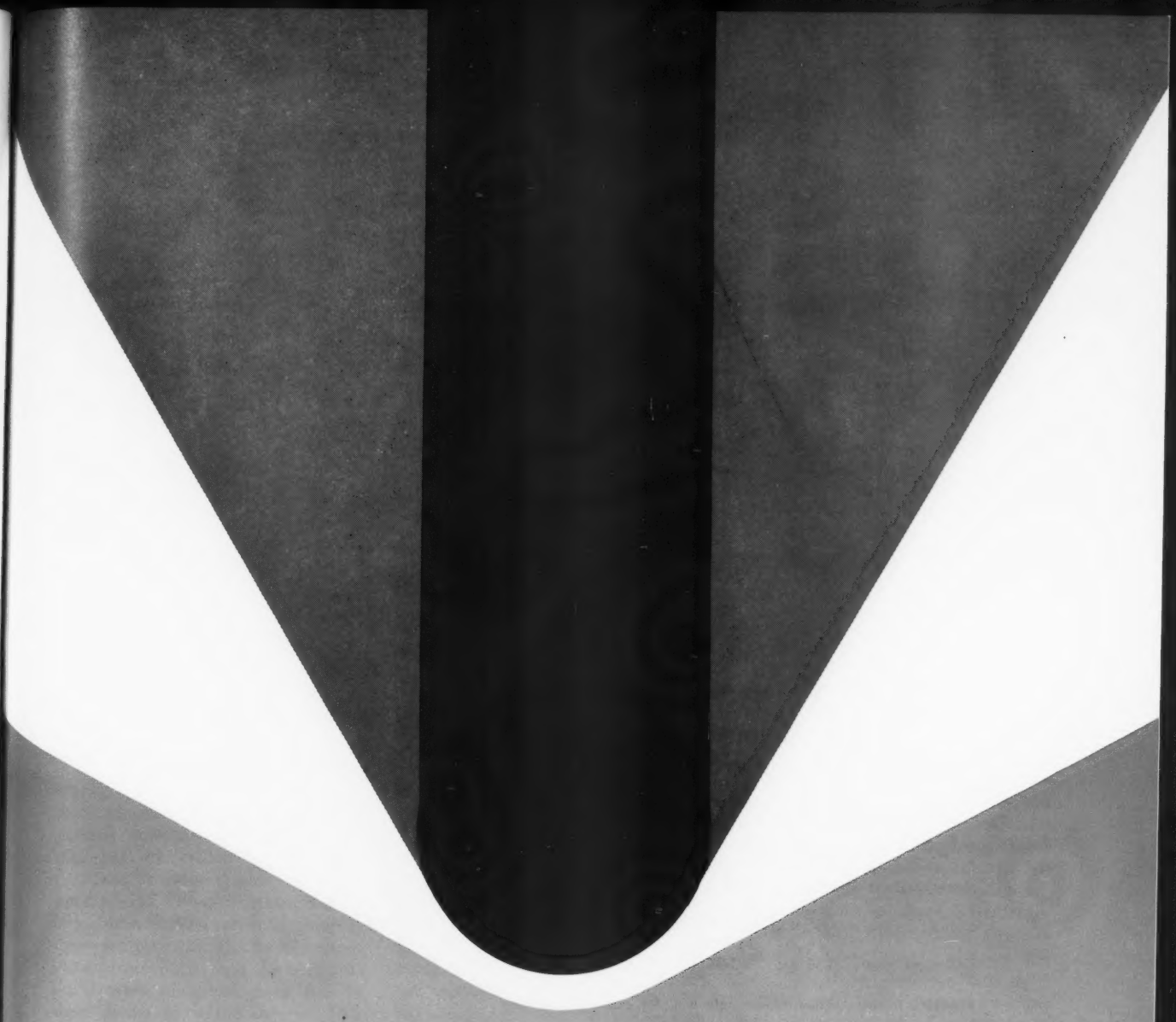

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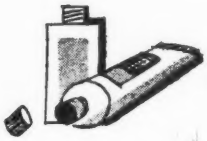

Advancing Therapy

Athletic Pep Pills

The study by G. M. Smith and H. K. Beecher (*J.A.M.A.* 170: 542: 1959) was designed to answer the question of whether or not amphetamine sulfate (pep pills") improves athletic performance in trained athletes.

Six experiments were carried out on swimmers, runners, and weight-throwers to determine whether amphetamine sulfate in the dose of 14 mg. per 70 kg. of body weight improves the measured performance of such athletes. The experiments employed the double-blind procedure, placebos, and additional comparison medications (50 and 100 mg. per 70 kg. of secobarbital). Eighteen swimmers were studied a total of 453 times, 26 runners gave 205 performances, and 13 weight-throwers gave 123. The medicaments were given orally, and the performances were measured from two to three hours after the subjects had taken either amphetamine or placebo.

In all three classes of athletes, the majority of subjects performed better under influence of amphetamine (14 mg. per 70 kg.) than placebo. The improvement was statistically significant for all three classes of athletes. Eighty-five per cent of the weight-throwers, 73 per cent of the runners, and from 67 to 93 per cent of the swimmers performed better under influence of amphetamine than placebo. The weight-throwers obtained the greatest amount of improvement from amphetamine (from 3 per cent to 4 per cent); the runners obtained an improvement of approximately 1.5 per cent; the swimmers showed varying degrees of improvement in the various test situations (from 0.59 to 1.16 per cent).

This study has shown that the performance of highly trained athletes, of the classes studied, can be significantly improved in the majority of cases (about 75 per cent) by the administration of amphetamine.

Results of an equally well-controlled study by P. V. Karpovich (*J.A.M.A.* 170: 558, 1959) did not produce equivalent results, however. In an investigation of the effect of amphetamine sulfate on the athletic performance of 54 male college students, the drug was given in doses of 10 and 20 mg., either one hour or one-half hour before the test. Activities used were as follows: running to exhaustion on a treadmill twice in succession with a 10-minute rest in between, running 220-yd. track time trials, running distances from 100 yd. to 2 miles under competitive conditions, swimming 100 yd. twice in succession with a 10-minute rest in between, and swimming 220 and 440 yd. Altogether 532 test were statistically analyzed. All subjects but four showed neither beneficial nor deleterious effects. Three of the subjects were definitely benefited by the amphetamine, and one man was affected deleteriously. All these men received 20 mg. of amphetamine.

Thiostrepton

Thiostrepton is a newly developed crystalline antibiotic derived from a *Streptomyces* species that is highly active against gram-positive organisms, including cultures resistant to other known antibiotics.

This antibiotic is primarily bacteriostatic. It is stable in simulated gastric and intestinal juices, feces, urine, and blood plasma. The antibiotic can be assayed by either the tube dilution or agar diffusion method. Thiostrepton showed little if any activity against gram-negative bacteria tested. No activity was observed against 12 species of fungi. For most organisms inhibited by thiostrepton, the minimal inhibitory concentration was in the vicinity of 0.03 to 0.06 μg./ml.

The present study by J. Kelly et. al. (*Antibiotics and Chemother.* 9: 87, 1959) was undertaken to investigate further the sensitivity to thiostrepton of various pathogenic organisms isolated from clinical specimens and tested for antibiotic sensitivity by the disc method.

The results of disc sensitivity studies on 203 microorganisms (including 82 *Staphylococcus aureus* organisms), suggest that thiostrepton should be accorded a clinical trial against the various microorganisms markedly susceptible to it, especially including *Staph. aureus, Staphylococcus albus,* nonhemolytic *Streptococcus,* and *Streptococcus viridans* types. It is anticipated also, on the basis of these studies, that thiostrepton will be of little or no clinical use against *Pseudomonas aeruginosa, Proteus* species, *Aerobacter aerogenes,* or *Escherichia coli.*

Anti-Depressants

Niamid (nialamide) is effective against a variety of depressed mental states and is unusually safe according to the reports to the Eastern Psychiatric Research Association.

The drug has markedly improved depressive schizophrenic patients whom doctors had been unable to help with any other treatment for a period of years, according to Dr. Paul Feldman, director of research and education, Topeka State Hospital, Topeka, Kansas. It proved helpful in 25 of 50 schizophrenics described as "withdrawn, regressed, inactive and apathetic."

Dr. Frank Ayd, Jr., chief of psychiatry, Franklin Square Hospital, Baltimore, Md., noted:

"Because Niamid is well tolerated

by patients in every age group, and particularly because it apparently does not cause postural hypotension, it is very safe for the treatment of ambulatory depressed patients by general practitioners and other specialists besides psychiatrists."

Dr. Ayd reported improvement in 51 patients out of 100; of these, 67 were diagnosed as psychotic.

Studies in animals indicate that nialamide is essentially non-toxic, does not cause liver damage and seldom lowers blood pressure, according to Dr. Robert P. Rowe and associates of Chas. Pfizer & Co., Inc., in whose laboratories the drug was discovered. Other animal tests, reported by Dr. Barry M. Bloom and associates, also of Pfizer, indicate that substantial amounts pass through the body without undergoing any significant chemical change.

Chemically, the compound is N-isonicotinoyl-N'-(S-beta[N - benzylcarboxamide] - ethyl) hydrazine. Both laboratory and clinical studies have revealed that it is one of the most effective such drugs yet discovered, and in addition it is a good deal safer than others.

A new, safe and highly effective anti-depressant, for use in simple depressions, was described by Dr. L. Earle Arnow, president of the Warner-Lambert Research Institute of Morris Plains, N. J.

The generic name of the new drug is phenalzine dihydrogen sulfate, its chemical name is beta-phenylethylhydrazine, and its trade name is Nardil. Dr. Arnow described it as a "rapidly-acting, long-lasting monoamine oxidase inhibitor." It is believed to restore depressed patients to normal by raising brain levels of certain amines.

In his paper, read before the American Therapeutic Society, Dr. Arnow indicated that an analysis of 580 cases reported by 16 investigators showed Nardil to be effective in 84 per cent of the depressed patients treated. Improvement usually occurred in a week, with maximal benefit achieved several weeks later.

Side effects from Nardil therapy are occasional and transient, and no evidence of toxicity has been reported.

DMCT Antibiotic

A new antibiotic of the broad-spectrum tetracycline family has been shown to be more effective against test bacteria than any of its predecessors.

Drs. Hans A. Hirsch and Maxwell Finland of Harvard Medical School reported in the New England Journal of Medicine (vol. 260: 1099, 1959) that demethylchlortetracycline (DMCT), tested against three disease-causing organisms, showed higher antibacterial activity for longer periods of time than two of its chemical relatives, chlortetracycline and oxytetracycline.

The investigators refer to a previous Harvard study by Dr. Finland and Dr. Calvin M Kunin, which showed DMCT to be superior in antibacterial activity also to tetracycline, now the most widely-used broad-spectrum antibiotic.

For both tests, the organisms used were Streptococcus 98, Staphylococcus 209P, and Bacillus cerus 5, all of which are sensitive in varying degrees to all drugs tested in these studies.

DMCT was developed by Lederle Laboratories Division, American Cyanamid Company.

Soma

"Soma," as Aldous Huxley named his drug in "Brave New World," affected the mind as a tranquilizer and sedative. Since the medical use of "soma" refers to the body rather than the mind, as the author admitted in a more recent publication, it has now been correctly used to name a muscle relaxant. The unique new drug, discovered by the unique Dr. Frank M. Berger, previously responsible for mephenesin and meprobamate, relieves muscle pain and spasm without interfering with the body's natural defense reflexes. This is accomplished by relaxation of muscles in spasm to break the spasm and pain cycle and by analgesic action on lower neurological centers. "Soma" is an N-isopropyl derivative of meprobamate with unusually low toxicity and causing occasional sleepiness only at high dosage levels.

Alpha Chymotrypsin

Alpha chymotrypsin is a protein-digesting enzyme extracted from cattle pancreatic glands. In operations for cataracts it dissolves the ligaments that hold the lens to the eye. This permits the surgeon to lift off the cataract without mechanically forcing it.

Animal experiments and extensive trials on humans have shown the drug to be highly specific for this use. It acts on only the lens ligaments, called zonules, leaving nearby tissues unaffected, according to Dr. Richard C. Troutman of the State University of New York Downstate Medical Center in Brooklyn.

Besides reportedly being safer and simpler to perform, operations involving the use of alpha chymotrypson are easier on the patient because of the reduction in surgical manipulation.

Alpha chymotrypsin's action on zonules was discovered by Dr. Joaquim Barraquer of Barcelona, Spain, during an attempt to dissolve a blood clot at the rear of a patient's eye.

Soon after he had reported the discovery, the technique was being tested in this country, Europe, Japan and Africa. More than 13,000 operations have been performed.

The drug, under the name of Alpha Chymar, is being manufactured by the Armour Pharmaceutical Company in Chicago.

Gout Treatment

An optimistic report on sulfinpyrazone, a newly discovered drug to relieve gout, was made to the Second Pan-American Congress on Rheumatic Diseases.

Dr. D. B. Montgomery, head of a Toronto team that has been testing the drug for two years, termed it "undoubtedly the most potent uricosuric agent presently available" and "virtually free of any serious toxic manifestations."

Fifty gout patients were treated with sulfinpyrazone from periods of two to twenty-six months.

Acute attacks decreased from an average of four a year to one a year and the attacks that did occur were less severe.

Laboratory findings had shown that during the first or second day of treatment uric acid excreted through the urine rose 130 per cent and uric-acid levels in the blood of gouty patients fell 57 per cent.

Tigan (Roche) is a new drug for the prevention and control of nausea and vomiting, claimed to do so without side effects. The new compound is 4-(2-dimethylaminoethoxy)-N-(3,-4,5-trimethoxybenzoyl)-benzylamine hydrochloride, available as 100 mg. capsules in bottles of 100 and 500.

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Concentrated Imitation Butterscotch Flavor	2 ozs.
Concentrated Imitation Caramel Flavor	1 oz.
Imitation Tame Cherry Flavor 2:1	2 ozs.
Syntharome Imit. Wild Cherry Flavor Special	1/4 to 1/2 oz.
Imitation Wild Cherry Flavor 2:1	2 ozs.
Imitation Chocolate Aroma Flavor	2 ozs.
Cola Type Flavor 1:1	1/2 to 1 oz.
Cola Type Flavor 4:1	4 ozs.
Concentrated Lemon-Lime Flavor	1/4 to 1/2 oz.
Licorice Type Flavor 1:1	1/2 to 1 oz.
Syntharome Imitation Maplenut Flavor	1/2 oz.
Syntharome Imitation Raspberry Flavor	1/4 to 1/2 oz.
Syntharome Imit. Tutti-Frutti Flavor	1/4 to 1/2 oz.
Imitation Tutti-Frutti Flavor 2:1	2 ozs.
Imitation Rum and Butter Flavor	1/2 oz.

The indicated usages to the gallon of syrup are mentioned purely as indications for test evaluation work in manufacturer's own formulations.

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	SUGGESTED USAGE TO 100 LBS.
Apple Imitation	2 to 4 oz.
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Cherry Imitation	2 to 4 oz.
Cola Type	2 to 4 oz.
Grape Imitation	2 to 4 oz.
Lemon	2 to 4 oz.
Lemon-Lime	2 to 4 oz.
Lime	2 to 4 oz.
Loganberry Imitation	2 to 4 oz.
Maple Imitation	2 to 4 oz.
Orange	2 to 4 oz.
Pineapple Imitation	2 to 4 oz.
Raspberry Imitation	2 to 4 oz.
Root Beer	2 to 4 oz.
Strawberry Imitation	2 to 4 oz.
Tutti-Frutti Imitation	2 to 4 oz.

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Wallerstein Manufactures Enzymes and Antibiotics for the Pharmaceutical and Cosmetic Industries

Skin Research

Screening Anti-Inflammatory Activity

Adult, male subjects are selected who give a brisk follicular pustular response to a croton oil patch test according to J. A. Witkowski and A. M. Kligman (*J. Invest. Dermatol.* 32: 481, 1959). The pustule-provoking stimulus consists of applying a plastic Ban-aid moistened with 0.25 ml. of a 25 per cent croton oil in acetone solution just prior to use. Circular test sites 1.5 cm. in diameter are marked out with a dye after defatting the skin by rubbing with ether soaked gauze.

The test agents are dissolved or suspended in a vehicle containing carboxymethyl cellulose, 10 mg/ml and polysorbate 80, 4 mg/ml. Insoluble substances are homogenized in a grinding vessel. The injections were made intradermally, always in a volume of 0.5 ml. The quantity per injection for preliminary screening was 0.5 to 2.0 mg.

To do the test, the injection is made into the center of the circular test site which is then immediately covered with the croton oil patch. The patch is removed at 24 hours and pustule suppression is estimated to the nearest 25 per cent. The control site is injected with 1 mg. of cholesterol suspended in the above vehicle. The test agents must not in themselves produce inflammation. Four subjects were used for each test substance, but we now consider two sufficient. The results are highly consistent.

As a rule the greatest activity was shown by those compounds which clinical experience has proved to be p o t e n t anti-inflammatory agents. Triamcinolone, for instance, was the most active of all. For a number of these compounds the results of testing by the granuloma pouch technic were known. The agreement was quite good and in no case was there a marked discrepancy.

There is no justification for thinking that highly accurate ratios of potency can be established from a screening procedure of this sort.

Topical effectiveness will principally depend on penetration from the surface. The skin's premeability to the test substance will, therefore, be decisive. It is conceivable that an agent, effective by injection, might be totally inactive topically. Conversely, effective topical agents would almost certainly exhibit anti-inflammatory activity by injection. Accordingly, an experimental method of topical testing for anti-inflammatory activity would not only be meaningful but considerably simpler. The authors have not produced an experimental inflammation which could be consistently moderated by topical steroids of known effectiveness.

Cosmetics as Drugs

Dr. Stephen Rothman of the University of Chicago Department of Medicine addressed the New York Chapter of the Society of Cosmetic Chemists during the special meeting held at the Geigy Chemical Corporation plant in Ardsley, New York. The speaker expressed the medical point-of-view toward drugs in cosmetic preparations, and this generated lively discussion.

Dr. Rothman felt that it was "ill-advised to add chemically and pharmacologically active drugs to cosmetic preparations and to sell them across the counter indiscriminately" and in relation to hormones and vitamins "medicated cosmetics have a fixed concentration of the drug with no concern for differences of individual needs. Worse than that, they would not have a limit of absolute dosage. This implies serious danger if the material is able to penetrate the skin. In trying to avoid this danger by fixing the concentration at an extremely low level, the efficacy of the medication will become problematic and may serve only promotional purposes." The point primarily made was that cosmetics should be products that have only superficial action in improving the appearance of the skin and any more deep-seated activity lies in the field of the physician.

Comment: This is the medical point-of-view, of course, that says aspirin or other proprietary drugs should not be made available for unsupervised public use. This also implies dissatisfaction with safeguards imposed and policed by the FDA with respect to the safety of drugs or cosmetics that can be classified as drugs. Government regulations assure safety of cosmetic products without the need of a straitjacket fashioned by organized medicine to prevent progress.

Sudden Hair Whitening

Different explanations of the phenomenon of sudden graying or whitening were attempted by Vauquelin and later by Metchnikoff. Vauquelin thought that a mysterious substance, which dissolves the pigment, is excreted under mental stress. Metchnikoff believed that pigment is absorbed and carried away by phagocytes, which he called "pigmentophages." Both theories have found no support and are practically forgotten.

Landois' theory is that in sudden graying air bubbles enter the hair while the pigment is fully retained. These air bubbles make the hair appear white through light reflection. This theory has been more widely accepted, and the observation has

been confirmed microscopically by Heinecke, Gasteiger, Wilson, Knoult, Haxthausen, and Cady and Trotter. Pillsbury holds that the graying may result ". . . from subtle damage to the melanocytes in the matrix so that the hair may lack pigment. Another possible explanation is that stress may induce an alopecia totalis, following which during recovery the hair may lack pigment."

In France, Brocq believed that one can become gray very fast and even suddenly due to worry and shock. Hallopeau considered these cases as not exceptional, and Dubreuilh believed that whitening can appear rapidly or slowly without preceding alopecia.

Among Austrian, German, and Swiss dermatologists, Hebra and Kaposi considered it "only possible to turn gray in the period required for the physiological growth of the individual hairs, and therefore neither a single hair nor all the hairs can turn grey other than gradually. In fact they cannot become grey suddenly." Stieda believed that those who experienced a rapid change of color had been dyeing their hair but had been unable to do so due to illness or excitement. Bruno Bloch, who discovered dopa oxidase and developed the dopa theory of enzymatic melanin formation, expressed doubt regarding the possibility of sudden graying.

Most American and British dermatologists admit the possibility of sudden change in color of the hair. Ormsby and Montgomery write in their textbook, "Cases of sudden blanching in a single night are sufficiently numerous and well authenticated as among the rare possibilities." Practically the identical words are found in the standard textbooks by Andrews, Hazen, Pusey, Stellwagon, Schamberg, Sequeira, Ingram, and Brain. Sutton and Sutton, on the other hand, believe that physiologic and anatomic facts are incompatible with the possibility of actual nonartificial blanching. Pillsbury and co-workers hold that the ". . . legendary tales of individuals, whose hair turned grey overnight (24 hours) as the result of some crushing, psychic trauma, must be classified in the realm of fiction, despite the reports of otherwise trustworthy observers. Severe emotional stress may cause precipitous greying, but this requires months, not days."

—A. J. Ephraim *A.M.A. Arch. Dermatol.* 79: 228, 1959.

Bituminous Ointment

A new distilled bituminous asphaltite (Bitupal, Avelno Corp.) from the Dead Sea was studied by J. Shanon and S. Kamnitzer (*A.M.A. Arch. Dermatol.* 79: 592, 1959). Eighty-five patients with various dermatologic disorders were treated in this series, and, in addition, skin sensitization was studied.

From the results of the study it appears that 30 per cent bituminous asphaltite ointment and 15 per cent bituminous asphaltite cream are very effective in various acute and chronic pruritic dermatoses.

Bituminous asphaltite shows a low incidence of skin sensitivity.

It has a good healing effect on the skin. In some cases the 30 per cent bituminous asphaltite ointment was too drying. Nevertheless, the patients tolerated it, and no untoward reactions could be observed. In such cases, the 15 per cent bituminous asphaltite cream is indicated, particularly in antecubital areas and regions of the neck and face. The cream is cosmetically acceptable and washed off easily. The odor is not objectionable to many patients.

Bituminous asphaltite has a very strong antipruritic effect, which seems to be more pronounced than that of many available tar preparations.

The reparative and antipruritic effect of bituminous asphaltite was at least as potent as that of 2.5 per cent hydrocortisone ointment; in some cases it proved even more effective.

The 30 per cent bituminous asphaltite ointment produced significantly better results than an ointment containing 8.7 per cent Colorado shale oil.

This medication should be used cautiously in the multiple reactor type of patient.

New Topical Steroid

The first steroid hormone preparation, designed specifically and exclusively for topical use in the treatment of allergic dermatoses and other skin conditions, has been developed by The Upjohn Company.

The new drug, fluorometholone, trademarked Oxylone, is reported to demonstrate outstanding clinical effectiveness in controlling contact dermatitis, atopic dermatitis, neurodermatitis, anogenital pruritis, and seborrheic dermatitis.

Used topically, fluorometholone is 40 times more potent than hydrocortisone; because of the relatively small amount of the steroid required for local effect, the risk of systemic side effects from any amount of the hormone that might possibly be absorbed is practically eliminated.

Griseofulvin

Griseofulvin, a substance produced by the growth of *Penicillium Janczewskii* Zal. has been shown by A. R. Martin (*J. Invest. Dermatol.* 32: 525, 1959) to influence the development of lesions on guinea-pigs caused by *Trichophyton mentagrophytes*. The effect is greater when griseofulvin is given orally at doses of 25-100 mg./Kg. but a marked effect on established lesions is produced by the local application of a griseofulvin ointment. When given from day 1 to day 8 at a dose of 25 mg./kg., the degree of edema of the lesions on the treated animals was only about 10 per cent of that of the control lesions. When administration was delayed until the third or fifth day, further development of the established lesions was checked, especially by the higher dose levels, some effect being discernible when the daily dose of griseofulvin was 5-10 mg./kg.

Topical Antibiotics

There was a change from a sensitive to a resistant antibiogram in 16 of 136 patients treated by *C. S. Livingood et al.* (*J. Invest. Dermatol.* 32: 485, 1959) with either tetracycline or erythromycin ointment.

Of the 109 patients treated topically with either neomycin, bacitracin, or the combination of neomycin-bacitracin, there was either no change in the antibiogram or *Staph. aureus* was not isolated afterwards.

Emergence of antibiotic-resistant *Staph. aureus* was noted in 17 of 92 patients with skin infections, treated systemically with tetracycline, erythromycin or novobiocin.

The problem of emergence of antibiotic resistant *Staph. aureus* following the use of topical and systemic antibiotic therapy for the treatment of cutaneous bacterial infections is of greater significance in in-patients than in out-patients.

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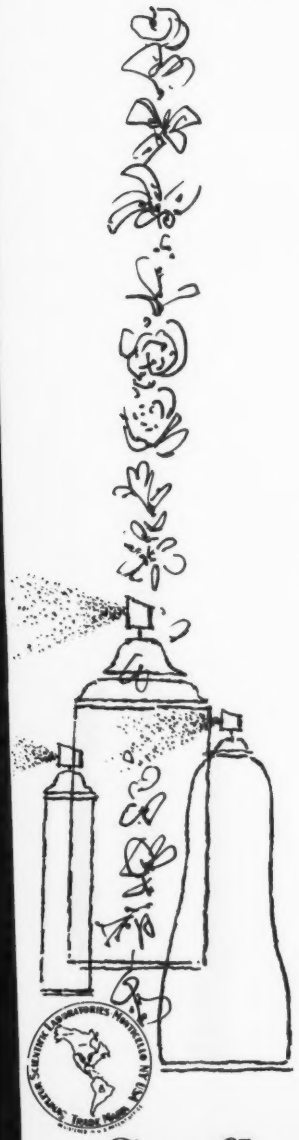

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Lavender	DH-66
Cologne	DH-111
Cologne Bouquet	DH-117
Carnation	DH-131
Cedar Wood	DH-132

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Bouquet	DH-28
Floral	DH-57
Lavender	DH-66
Lilac	DH-72
Floral Cologne	DH-83
French Oriental	DH-87
French Bouquet	DH-90
Cologne	DH-111
Jasmin Bouquet	DH-123
Mist Bouquet	DH-125
Mist Bouquet	DH-130
English Lavender	DH-133
Oriental Bouquet	DH-138
Sandalwood	DH-149

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Pine Wick Type	DH-30
Xmas Tree Pine	DH-31
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Orange Blossom	DH-59
New Mown Hay	DH-69
Spice	DH-74
Pine Virgin	DH-112
Cool Mint	DH-115
Spice Lavender Bouquet	DH-129
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Rose	DH-55
Spicy Floral Bouquet	DH-56
Lilac	DH-72
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Lemon	DH-94
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English Lavender	DH-133
Lavender Bouquet	DH-150

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Jasmin Bouquet	DH-123
Floral Bouquet	DH-147

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Oriental Bouquet	DH-54
Rose	DH-55
Orange Blossom	DH-59
Lavender	DH-66
Floral Bouquet	DH-76
Lemon	DH-94
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Carnation	DH-131
Cologne	DH-142
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Industry's Books . . .

Formulary of Perfumes and Cosmetics, *by R. M. Gattefosse, 252 pages, Chemical Publishing Co., Inc., New York, 1959,* **$6.50.**

This book, a translation of an older French work, is intended for chemists and those engaged in the formulation and manufacture of perfumes and cosmetics, as well as a guide for students and beginners. Raw materials of perfumery are discussed, along with a listing of fundamental ideas in perfume blending and many perfume formulas. The section on cosmetics also provides many cosmetic formulations culled from the old literature. As an example, two formulas are given for thioglycolate cold waves as against 19 for hot-wave solutions. This book is hardly worth more than a passing glance to those actively engaged in cosmetic formulation.

Welding Of Plastics, *by J. Alex Neumann, President, American Agile Corp., and Frank J. Bockhoff, Assistant Professor of Chemical Engineering, Fenn College, 279 pp., Reinhold Publishing Corp., New York, (1959), cloth,* **$7.25.**

This is a treatment including all phases of the subject ranging from initial design procedures to final detailed fabrication methods. Various physical and chemical properties of individual plastics presently used for welded construction are covered with regard to their use in chemical and allied processing. All presently known techniques of welding are covered in detail and many step-by-step procedures with photographs are included. In addition, the book contains complete corrosion resistance tables, plus a concise guide for the choice of material.

The Design Of Physics Research Laboratories, *108 pp., Illus., Reinhold Publishing Corp., New York, cloth* **$4.50.**

This book presents the proceedings of a symposium held by the London and Home Counties Branch of The Institute of Physics, at the Royal Institution on November 27, 1957. The symposium was attended by some 400 architects, physicists and others interested in the design of research laboratories.

Vascular Spiders And Related Lesions of The Skin, *by William Bennett Bean, M.D., State University of Iowa, 372 pp., Illus., Charles C. Thomas—Publisher, Springfield, Ill., (1958), cloth,* **$8.50.**

This book is based upon an extensive clinical experience during 20 years of observations and recordings and is replete with much exclusive neglected information for all people in clinical practice, particularly pediatricians, dermatologists, ophthalmologists, surgeons, and internists engaged with functions of the circulation. The problem of structure and action of blood vessels connects the diverse observations and thoughts of the book.

Filler Metals For Joining, *by Orville T. Barnett, Assistant Manager, Metals Research Div., Armour Research Foundation, 244 pp., Illus., Reinhold Publishing Corp., New York, (1959), cloth,* **$7.**

This reference work presents reasons for, and summarizes industrial practice in selecting the proper filler metal for any metal joining situation. It covers all of the ferrous and non-ferrous joining metals. Welding, brazing and soldering are treated with major emphasis on products for manual and automatic arc welding. Available materials are discussed in terms of applicability, mechanical properties and degree of availability. Where many filler metals are offered for a single application, factors controlling the best choice are outlined.

The Chemistry Of Drugs, *by Norman Evers, Ph.D., F.R.I.C., and Dennis Caldwell, B.Sc., F.R.I.C., 415 pp., Third Ed., Interscience Publishers, Inc., New York, (1959), cloth,* **$12.25.**

This deals with the chemistry of both synthetic and natural drugs, their structure, methods of preparation and synthesis, as well as their chemical properties and therapeutic uses. It also includes a comprehensive table of official or approved names of drugs together with their proprietary names and their chemical names. This is an important work of reference for the pharmaceutical and medical professions.

Modern Pharmacognosy, *by Egil Ramstad, Ph.D., Purdue University, 480 pp., Illus., Blakiston Div., McGraw-Hill Book Co., Inc., New York, (1959), cloth,* **$10.50.**

The drugs of biological origin continue to remain the backbone of drug therapy; in fact, they have increased in significance. This work is primarily intended as a text for the pharmacy student. It gives him biochemical insight that is indispensable for the understanding of the natural drugs themselves and is an invaluable asset when the student undertakes his subsequent studies in pharmacology. Because of its approach, it will also be of interest to pharmacologists, physiologists, manufacturing pharmacists, and pharmaceutical chemists. Also included are chapters on the variability of natural drug products, microbiological fermentation methods, the commercial aspects of drug production, and the analysis and storage of crude drugs.

Pharmaceutical Selling, "Detailing," And Sales Training, *By Arthur F. Peterson, B.S., Ph.C., Geigy Chemical Corp., Second Ed., 384 pp., Illus., Heathcote-Woodbridge, Inc., Scarsdale, (1959), cloth,* **$7.95.**

While this book specifically covers the art and the problems of selling pharmaceuticals and related public-health products that are used or administered by or on the prescriptions of physicians, dentists, and veterinarians, it contains considerable basic information applicable to the selling of technical products in general. Primarily, however, the book is a sales training manual for pharmaceutically indoctrinated personnel. Contents include: Chapters I — Adventure in Pharmaceutical Selling and "Detailing"—II—Requisites of a Pharmaceutical Sales Representative — III — Good Men are Sought — IV — The Training Class —V—The Price of Progress—VI—Organizing a Territory on Paper—VII—Planning The Work—VIII—How To Improve and Facilitate Clerical Work—IX—Selling — X—Selling (Cont.) XI Fair Profit, Fair Dealing, and Fair Trade—XII—Fundamentals of "Detailing"—XIII—The "Detail" Interview—XIV—Hospitals and Other Groups—XV—Medical Convention Exhibits—XVI Policy, Ethics, and Thrift.

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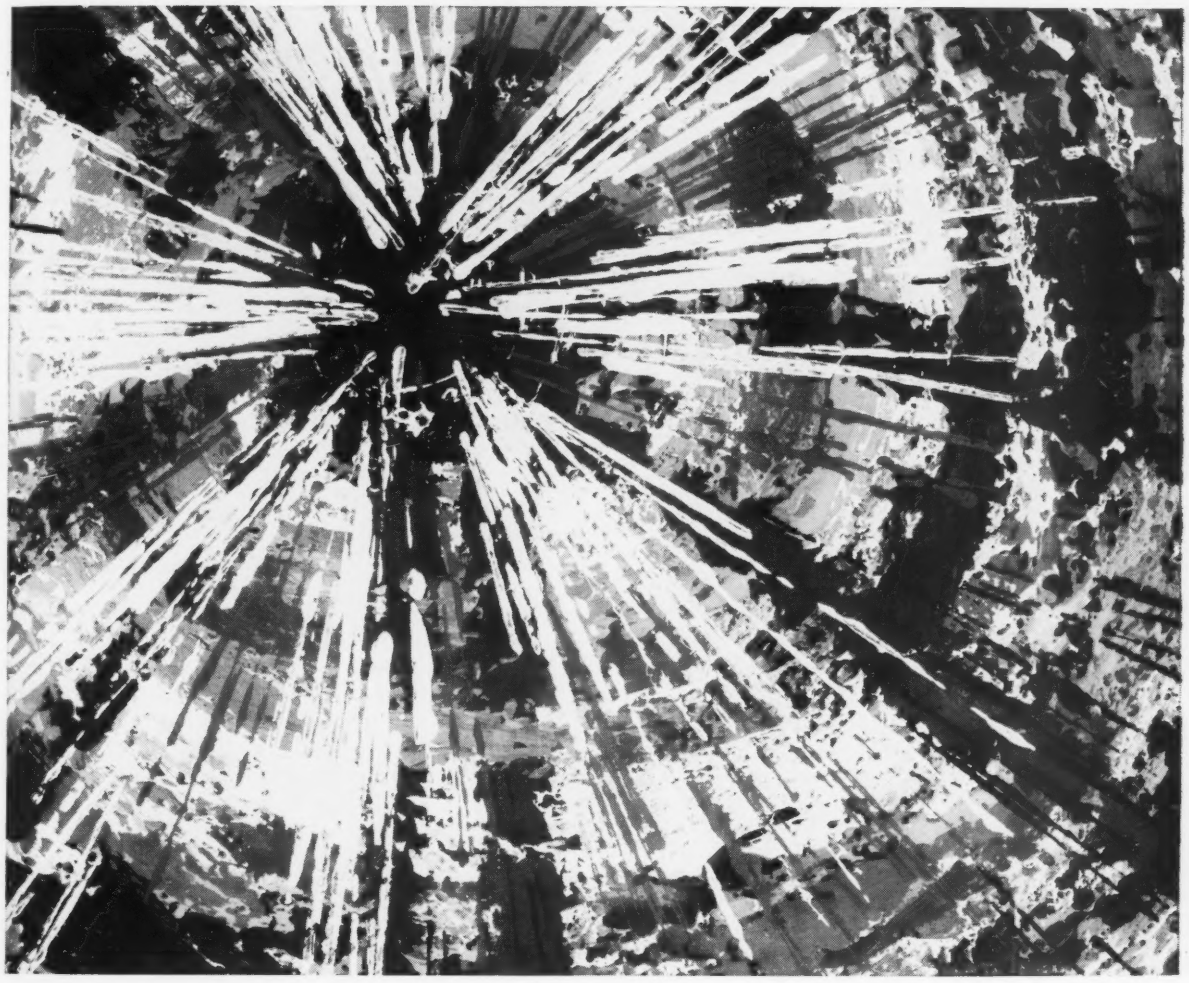

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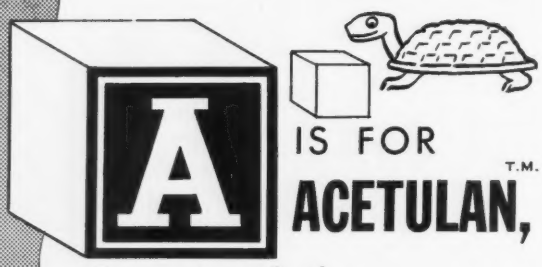

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Reader's Questions . . .

Water Softening: *We have been manufacturing, in small quantities, a stearic acid base, oil-in-water emulsion which is being packaged as a skin cream. Up to now we have been using purchased distilled water, but our volume is increasing and we will have to purchase water-processing equipment. Could you give us some idea as to what the industry in general does about the water problem? Is distilled, demineralized or tap water used in our type of product? Our local tap water supply analyzes at 100 ppm total hardness.* ATLANTA

Even with a simple, almost foolproof formula based upon stearic acid, we would be inclined to stick to distilled water in scaling up production. When changing batch sizes, unless all possible variants are kept constant, a new set of problems may arise that could adversely affect stability and other properties of the cream. In any case, for necessary reproducibility of operation, distilled or deionized water should be used in cosmetic processing. The selection of distilled or deionized water is based solely upon economic grounds and ion exchange installations are widely used in the industry. Actually, 100 parts per million of calcium in water should have little effect in the manufacture of many emulsions. For a 1,000 pound batch, using as much as 700 pounds of water, there would be 0.07 pounds of calcium or slightly more than one ounce, which could combine with about 0.2 pound of stearic acid (a little more than 3 ounces) out of a total of probably 200 pounds of stearic acid. This four or five ounces of calcium stearate could not have much effect in reversing an adequately stabilized oil-in-water emulsion. More important than the true hardness content of tap water is the presence of iron and other heavy metals which even in traces might promote discoloration and oxidative deterioration of the cream and its perfume content. Water for cosmetic processing should be filtered before use and should have a low concentration of dissolved ions as insurance for uniformity and stability.

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Available in five forms; granular, fine, medium, impalpable and 50% W/W solution – used in creams, lotions, sprays and powders.

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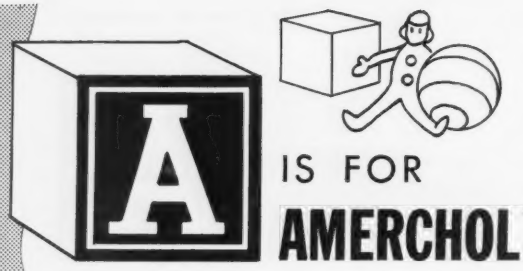

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A real dermal treat
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The AMERCHOLS head the list of skin moisturizing ingredients in use today —and with good reason. They are natural hydrophilic, non-ionic emulsifiers and surfactants derived from cholesterol and related sterols of pure lanolin origin.

Because of their unusual emollience and spreading characteristics, the AMERCHOLS are invaluable in make-up preparations as well as in creams, lotions, aerosols, baby toiletries, shaving preparations, hair products and ointments. The AMERCHOLS are hypoallergenic and non-irritating. They are soothing and safe for use on the most delicate tissues.

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Write on your business letterhead for complete technical literature, suggested formulas and samples.

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AMERCHOL PARK — EDISON, N. J.

(*Continued from page 723*)

superb analytical facilities, on a very agile advertising agency, on buying the right man at the right time, on knowing when to zig and when to zag.

"Let the other guy spend the money to educate the public. We'll climb on if his reorders start coming in. Nothing speaks like success. If X.Y.Z. company is doing this, it must be good because they're no fools, not with twice our gross sales."

But you are always a little late when you use this approach. If you have the courage to copy a *little* fellow who had a good idea, you can win by drowning him out, by using his own selling line over more outlets than he can buy. But it is usually a game of follow the *leaders* in our business. And the bigger you are, the slower you are to jump because your pipelines or internal red tape are too long and tortuous. Because the ride is free, the tendency is always "wait a little longer, let's see how they are doing first." And if you're following the leader, how do you phrase your advertising so that the customer will buy your product rather than X.Y.Z.'s, the *now well-established* brand?

One Answer to the Problem

Is there an answer to these company practices in regard to research management? I think so—although I doubt if any of the objections can ever be completely eliminated. It is simply the nature of the beast—both corporate and human—to react as described above.

It seems to me that there should be a determined effort on the part of both management and the technical staff to put the whole operation where it belongs—as part of a business enterprise trying to supply what the market demands, trying to do so with every competitive advantage it can grab.

A laboratory rarely exists just for the glory of the company. Nor, from the company's point of view, can it exist merely for the personal satisfaction of the chemists working in it—although the company must of course bow respectfully before the ikon of good personnel relations. For such reasons, the company will discourage "blue sky" projects which so often are bad financial risks, but at the same time it will overlook the fact that the research director is allowing and even encouraging a certain amount of this work. It recognizes that if he did not, his really good chemists would soon leave out of dissatisfaction. And always there is the recurrent hope that the boys may really hit the jackpot this time!

Beyond this "basic" work which necessarily proceeds to some degree by feel and flair, there seems to be only one strictly rational approach: find a market demand, fill that need first, and hope that you have enough lead time and a good enough product to hold the position you establish.

Using this approach, the laboratory is not panicked into projects which are rumored to be hot in the

other guy's lab. Nor is time wasted warming over the competitor's newest product which is not really a new product, but rather a new selling approach. No more wasted time disproving the other fellow's advertising claims. Who cares whether our entry in the bandwagon race can *really* do the job while his only *claims* it?

No! Let the marketing and sales people determine to everyone's satisfaction that a real market exists for product X, that they could sell it with both hands tied behind their backs if it had property Y about which to rave, that such a product will still be wanted 6 or 12 months from now when we might hit the market with it. *Then* let the lab try to provide the product to fill that demand. And if it can't be done, let the lab say so as early as possible instead of filing progress reports. Finally, take the lab's advice on purely technical matters.

In trying to do the job requested by management, and also because it is to be expected from people hired for their creative ideas, the laboratory is almost bound to come up with five new angles for advertising purposes and five off-shoot products which "just happened" to be thought of while working on the requested one. Laboratory and marketing people then enter into the standard ritual dance until a compromise with honor to both sides is reached. Finally, the president makes the decision he always has to make—whether to go ahead and spend all that money on the advice of people whose necks are rarely as far out as his.

But the result will have been accomplished with more assurance, and less cost, than ever before.

PREMENSTRUAL TENSION

(*Continued from page 731*)

biturate hypnotics are also found, alone or in combination formulations, to allay pain.

Many of the drugs offered are also offered for dysmenorrhea, so a uterine relaxant or antispasmodic is included. Where depression is a major factor, the "psychic energizers," such as Ritalin (Ciba) have proved useful. A rather exotic preparation is Femmes (Exact Labs. N.Y.C.). Femmes is a specific arrangement of certain active herbs, freed from inactive material. They are claimed to act on the hypothalamic—autonomic axis and to cause inhibition of pregnanediol and of antidiuretic hormone formation.

The most widely prescribed composition formulation is Pre-Mens (Purdue Frederick). The drug grew as a simple therapy that would relieve all or most of the symptoms of premenstrual tension. The diuretic effect of ammonium chloride is combined with antispasmodic action of homatropine methyl bromide, the mildly stimulating effect of caffeine, and the dual effect of vitamin B complex in increasing breakdown of estrogens by the liver and by increasing the utiliza-

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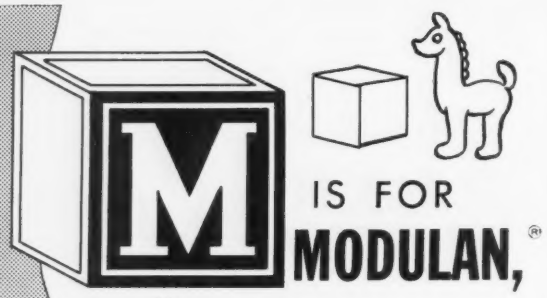

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Some of the outstanding characteristics of MODULAN ARE —

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Compatible with o/w emulsions
Compatible with soaps and foams

MODULAN is particularly recommended for use in creams, lotions, baby oils, hair preparations, shaving creams, cream shampoos, lipsticks and ointments.

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tion of proteins. Included with the bottles of enteric coated tablets are instruction sheets for patients including directions for high protein—low salt diets. Included in a second Pre-Mens preparation is d-amphetamine, replacing the caffeine.

The dollar volume in the premenstrual tension field is impossible to calculate, since only a fraction of the diuretic, hormone and analgesic prescriptions are intended for these symptoms. The only certain point is that increased awareness by women of the premenstrual syndrome will send them to the doctor, rather than regard the distress to be endured as a "woman's lot."

MOISTURE REGULATION

(*Continued from page 733*)

ical principle in the hornified epithelium which consists of a group of water-soluble hygroscopic and surface active substances which regulate the water content of this cell layer and which we call the Natural Moisturizing Factor.

Source of NMF

Herrmann and Sulzberger[12] favor the origin of the materials from the sweat. Spier and Pascher[13] consider it obvious that these substances are evaporation residues of sweat. However, a comparison of the components of sweat with that of the water-soluble components makes it doubtful that sweat could be the only source. They concluded from their investigations that only part of the material comes from sweat while the major portion derives from the process of keratinization. Szakall[14] believes the depots of NMF to be in the barrier or the innermost part of the stratum corneum. His experiments showed a group of compounds of similar chemical and physical properties in the stratum granulosum and he believes that both are identical and represent disintegration products of cell nuclei. When the epidermal cells move from the stratum spinosum into the stratum granulosum the cell nuclei disintegrate and build keratohyalin. This, in turn, penetrates the barrier and builds the water-soluble NMF of the horny layer. If, as occurs in anomalies of keratinization with increased keratin production, the cell nuclei do not disintegrate, no water-soluble hygroscopic compounds can be found. Matoltsy and Balsamo[15] studied the components of the cornified epithelium of human skin and concluded that, at the present time it is not known whether the soluble fraction is a precursor or a degradation product of epidermal keratin.

Chemical Composition of NMF

Determinations of the chemical composition of NMF have been made by Bolliger and Gross[16] and by Szakall[10]; however, the most detailed analysis has been made by Spier and Pascher[17]. The mean values

of their analysis are as follows:

	PER CENT
Free amino acids	40.0
Pyrrolidoncarbonic acid	12.0
Urea	7.0
NH_3, uric acid, glucosamin, creatinine	1.5
Na	5.0
Ca	1.5
K	4.0
Mg	1.5
Phosphate	0.5
Chloride	6.0
Lactate	12.0
Citrate, formate	0.5
Rest unidentified	

Sixteen different free amino acids could be determined. Proline was present in the smallest quantity and glutamic acid was next. About 30 per cent was present as serine and this constituted the largest amount. Only traces of water-soluble protein have been found on the skin surface although it is possible that water-soluble purine derivatives are still in the unidentified portion of about 10 per cent. The chemical nature of the active part of the water-binding components of the skin surface is still unknown.

Specificity of NMF

We showed earlier that compounds of the same nature occur in human hair and in wool[18]. Human hair contains less than wool and human skin. Bolliger and Gross found hair from the human head to yield the smallest amount of water-soluble materials of all mammalian hair fibers examined. The same authors found toenails to contain the same substances[19]. They also studied human and other mammalian skin flakes and found all to contain water-soluble hygroscopic materials of practically the same nature. Skin flakes consistently contained a higher amount of NMF than the corresponding hair fibers. Aside from a somewhat lower uric acid content, the composition of the water-soluble non-keratin of the human stratum corneum resembles that of other mammalian species.

This shows quite clearly that the principle of the natural moisturizing factor of the hornified epithelium exists in the animal kingdom too, and not only in the human race.

It is logical for the cosmetic chemist to utilize this fundamental information derived from skin research in his efforts to develop scientific products. All preparations designed to prevent or alleviate dry skin conditions should be based on this knowledge.

The idea that the retention of water by the skin may be promoted by the use of occlusive ointment films has already been recommended as a means of overcoming brittleness and rupture of the horny layer caused by a deficiency of NMF. However, as Flesch and Esoda's[20] experiments have shown, a

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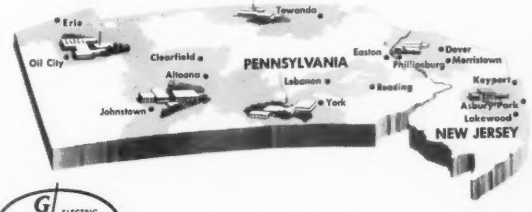

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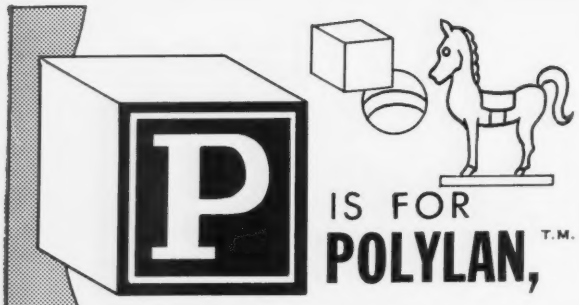

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Yes, the bells are ringing for this outstanding new development of our Research Laboratories. POLYLAN is the 100% active liquid wax ester of linoleic acid and fractionated lanolin alcohols. We have achieved essential unsaturation (Iodine no. 120) without sacrificing stability, and offer a product with remarkable penetration and emollient effects.

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horny layer with very little NMF cannot be satisfactorily hydrated through the use of occlusive ointments because this horny layer is unable to hold water in the first place. It would be more logical to use NMF itself as a simple replacement therapy. This is now possible since NMF has become a commercially available product. Our earlier investigations, as well as those of Schneider and Schuleit and Sulzberger and Herrmann demonstrated that it is possible to restore NMF by reapplication. The effectiveness of the commercially available NMF was investigated by Schneider[21] on forty selected subjects with dry skin conditions. His tests included water-in-oil emulsions and oil-in-water emulsions containing 3 per cent NMF and the same vehicles without the moisturizing factor. In half side tests he applied the control cream to one side and the cream with the NMF to the other twice daily for a total of 21 days. A significant improvement in the skin condition was observed before the end of the test period; in 80 per cent of the cases the dry skin condition disappeared on the side treated with the NMF cream while the side treated with the control substance was still scaly and rough and had the typical wrinkled appearance of ichthyosis. The treated side was smooth, soft and showed good skin tone.

REFERENCES

1. R. M. B. MacKenna *Modern Trends in Dermatology* New York-London 1943
2. I. H. Blank *J. Invest. Dermat.* **18,** 6, 1952
3. O. Jacobi *Kolloid Zeitschrft.* 114, 2, 1949
4. H. Staras Dissertation University Tuebingen 1951
5. W. Schneider and H. Schuleit *Arch. Derm. and Syph.* **193,** 434, 1951
6. I. H. Blank *J. Invest. Dermat.* **21,** 4, 1953
7. O. Jacobi *Berufsdermatosen* **6,** 1, 1958
8. P. Flesch *J. Invest. Dermat.* **31,** 1, 1958
9. S. Rothman *J. Soc. Cos. Chem.* **7,** 6, 1958
10. A. Szakall and H. Steupel *Die Wirkkung von Waschnittln auf die Haut.* Heidelberg Dr. Alfred Huettig 1957
11. O. Jacobi *J. Appl. Physiol.* **12,** 3, 1958
12. F. Herrmann, P. H. Prose and M. B. Sulzberger *J. Invest. Dermat.* **21,** 6, 1953
13. H. W. Spier and G. Pascher *Hautarzt* **7,** 2, 1956
14. A. Szakall *Arzneimittel Forschung* **7,** 408-411, 1957
15. A. G. Matoltsy and C. A. Balsamo *J. Invest. Dermat.* **25,** 2, 1955
16. A. Bolliger and R. Gross *Austral. H. exp. Biol.* **32,** 747-756, 1954
17. H. W. Spier and G. Pascher *Arch. klin. u. exp. Dermat.* **199,** 411-427, 1955; **201,** 181-192, 1955; **203,** 234-238, 1956; **203,** 239-245, 1956; **204,** 140-150, 1957
18. O. Jacobi *Meliand Textilber.* **32,** 6, 1951
19. A. Bolliger and R. Gross *Austral. J. exp. Biol.* **31,** 127-130, 1953
20. P. Flesch and E. C. Jackson-Esoda *J. Invest. Derm.* **28,** 1, 1957
21. W. Schneider, unpublished experiments.

PHARMACEUTICAL AEROSOLS

(Continued from page 735)

of the hay fever season, 90 per cent of a panel of physicians treated patients for bronchial asthma with an oral product. Combining the number of patients treated by parenteral, topical and oral therapy, a total of 473,500 patients received treatment. Since September does not represent a typical month, it is estimated that the total number of persons being treated by general practitioners for bronchial asthma is in the range of 3 million to 5.5 million. Considering the well documented clinology and efficacy of the aerosols for this purpose, we can project a much greater market than currently exists for these products.

New Frontiers

The pharmaceutical manufacturers' research and development activities in 1958 included testing of 114,600 substances biologically or pharmacologically according to the final report of the Research and Development Survey conducted by the Pharmaceutical Manufacturers Association. This involved expenditures estimated from 170 to 177.2 million dollars. It would appear a wise investment to apply research and development funds to the evaluation of drugs in inhalation aerosols in the following areas:

1. Radioactive drugs for the treatment of lung cancer;
2. The application of insulin and other antidiabetic drugs to aerosol therapy with a possibility of displacing the administration of these drugs by means of the hypodermic syringe;
3. Evaluation of mucolytic enzymes in the treatment of asthma and in the reduction of sputum viscosity in chronic bronchitis;
4. The use of drugs in aerosol form for cerebral stimulants and mood elevators;
5. The evaluation by inhalation of living attenuated organisms providing immunity against virulent tubercule bacilli;
6. The administration of sera by means of inhalation, obviating the need for a hypodermic syringe for this purpose;
7. The potentiation and further evaluation of new drugs in currently existing aerosols for the treatment of bronchial asthma and hay fever;
8. The development of immunity to allergens or hyposensitization by means of inhalation allergens.

If someone were to ask me what the potential of inhalation aerosols was, I would say good. Although this paper deals primarily with aerosols for inhalation there is considerable potential in the topical, oral and vaginal fields and it is hoped that these areas will be covered in a subsequent paper.

REFERENCES

1. Porush, Irving and George L. Maison. U. S. Patent 2,868,691. Self-propelling compositions for inhalation therapy containing a salt of isoproperenol or epinephrine.
2. Abramson, Harold A. 1946. Ann. Allergy. **4:** 440-456.
3. Findeisen, W. 1935. Uber das absetzen kleiner, in der luft suspendierter Teilchen in der menschlichen lunger bei der atmung. Arch. f. d. ges. Physiol. (Pfluger's) **236:** 367.
4. Van Wigh, A. M. and H. S. Patterson. 1940. The percentage of particles of different sizes removed from dust-laden air by breathing. J. Indust. Hgy. & Tox. **22:** 31.
5. E. I. du Pont de Nemours & Co., Inc. Market for aerosol products. 2nd. Edition 1958.

FDA DRUG REQUIREMENTS

(Continued from page 738)

come effective it means that we believe that it can be used as directed with safety. It does not mean that we approve the claims of efficacy or necessarily believe them. Not infrequently we take exception in correspondence with the firms to statements in the

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The RICILANS are unusual emollients, penetrants and spreading agents. They dissolve, plasticize and solubilize most cosmetic raw materials. We recommend that they be used in lipsticks for emollience, gloss, and color enhancement; in aerosols for the emollient films they impart; and in creams, lotions, and hair preparations for the unusual soft, waxy after-feel left on skin and hair.

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labeling which we do not believe to be justified. Our objections may or may not be heeded. We cannot prevent an application from becoming effective on the basis of unsubstantiated claims unless such can be definitely related to safety. When a new drug is marketed it is subject to other provisions of the Act which include those of misbranding. In this connection, however, the burden of proof in a Federal court is on the Government. We have learned by experience that proof of misbranding usually requires not only expert opinion but also negative data obtained by adequate clinical investigation.

After a new drug is on the market under an effective new drug application it is still a matter of concern to us. Applications are commonly revised over a period of time by the submission of supplements which are handled by the same procedure as the original application. The supplements may provide for an additional tablet of different potency from that initially distributed, for a change in formulation with respect to inactive ingredients for some modification in manufacturing procedures, distribution of the drug under the label of another firm, or for revised labeling. Revised labeling may relate to a change in dosage, added indications for use, or added precautions based on additional experience with the product. In comparison with some five hundred original applications which may be received in a year we may receive within the same period two thousand supplements for applications which are already effective.

New drugs under distribution are also a matter of concern to us from another aspect. We follow with interest the marketing experience with the drug. This cannot be done to an adequate extent on account of staff limitations. We do try however to cover the current medical literature. We may receive information in voluntary letters from physicians, in reports from our District offices, or from the firm which distributes the drug. Such reports may be favorable but more often they relate to adverse reactions. Occasionally such reports may justify revised labeling such as reduction in dosage or added precautions. This has been done sometimes on our initiative and sometimes on the initiative of the firm. In some instances it has been necessary to remove a drug from the market. Under such circumstances an effective application can be suspended by legal procedure.

I am pleased to be able to present this brief outline of the operations of the New Drug Branch of the Bureau of Medicine of the Food and Drug Administration. We are aware of the important part played by clinical investigators in the development of new drugs and we realize that our associations are too tenuous. In closing I would like to let you know that we welcome any help that you can give us, before or after a new drug is marketed, by correspondence, personal interview, or any other form of communication. •

(*Continued from page 728*)

Measurements were made of the surface, intra-keratin, and intra-dermal layers using specially designed electrodes and under different test conditions.

The method was applied to measuring the therapeutic effectiveness of test lotions and creams to impart emoliency, suppleness, etc. to the skin, using the rates of hydration and dehydration.

Degerming Activity of Toilet Bars—Interpretation of Bacteriological Data from Hand Washing Tests was the title of the paper presented by *J. J. Travers, A. C. Rohloff, E. L. Ambye and L. J. Vinson* of Lever Brothers Company. The *in vitro* antibacterial effectiveness of deodorant toilet bars is measured with a fair degree of accuracy under controlled testing conditions. Bars are assessed for degerming activity under actual usage conditions by some modification of the Price Serial Basin Wash procedure. This consists essentially of determining the number of bacteria on the hands of subjects before and after the use of a product containing a germicide, and calculating the per cent reduction.

Occasionally, laboratories may disagree on the relative degerming efficiency of soaps as determined in the Serial Basin Wash Test. The major difficulty stems from the fluctuations in cutaneous bacterial counts of subjects' hands and the need for a realistic interpretation of serial basin wash data becomes paramount.

Various traditional methods of interpretating cutaneous count data are per cent reductions determined on the basis of arithmetic mean values, geometric mean values and the arbitrary assigning of a single high initial value for all subjects. These treatments have been found to be in agreement for very effective germicidal bars but fail in the assessment of fair to good degerming products in subjects varying in initial cutaneous counts. An alternative method of analysis allows the realistic evaluation of a deodorant bar on small panels of subjects where the magnitude of the initial counts is not a factor. Essentially, the method is a regression analysis of logarithm of final count on logarithm of initial count. This analysis shows that percentage of reduction is not independent of initial count. The percentage of reduction is calculated from the regression line for a standard initial count representing the mean of the population. This approach gives unbiased and reproducible estimates of the degerming efficiencies of poor, intermediate and good deodorant bars.

Wilton R. Earle of the National Cancer Institute discussed *Long Term Tissue Culture as an Instrument in Quantitative Research.* Of recent years rapid developments in the technology of growing various types of mammalian tissue cells in culture outside the body has made the use of such cultures valuable in many fields of study. Established cell strains can in many instances be originated from single isolated cells, and the cells of such established strains can be

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maintained in rapid growth either on a solid substrate, such as a sheet of glass, or freely suspended as isolated cells in a rapidly agitated nutrient culture fluid. Such cultures can now be used for determining chemotherapeutic activity, for growth of viruses, for determination of toxicity or growth stimulation of specific compounds.

At least three established cell strains can be maintained in rapid proliferation in entirely chemically defined protein free media. These include such diverse cell types as mouse connective tissue fibroblasts, liver epithelium and human adult skin epithelium.

Whereas a few years ago cultures containing a few milligrams wet weight of cells were considered luxuriant, already certain cell types can be rapidly grown in cultures which contain multiple gram lots. Even much larger cultures could readily be grown when desired.

Use of these technological advances greatly advances the long-term tissue culture in its applications in precision research and emphasizes its even further potentialities of development in the future.

R. D. Charles and Phyllis J. Carter of Atlas Powder Co. investigated and reported on *The Effect of Sorbic Acid and other Preservatives on Organism Growth in Typical Non-Ionic Emulsified Commercial Cosmetics*. Preservation of non-ionic cosmetic products is occasionally difficult. As a practical approach to the problem, the Atlas Powder Co.'s Product Development Dept. Laboratory has obtained from four nationally known cosmetic houses a series of typical non-ionic cosmetic emulsions prepared with the preservatives normally used and a second series prepared with sorbic acid, inoculated them with a bacterium and eight molds, and observed them for evidences of organism growth after a three months' storage period. The tests show that many of the commonly used preservatives are effective in non-ionic cosmetics. Where failure was noted, as well as in cases where the usual preservatives worked well, sorbic acid afforded good protection.

Charles Merritt, Jr., Quartermaster Research and Engineering Center, discussed the *Application of Gas Chromatography and Mass Spectrometry to the Determination of Odor*. The detection and identification of the volatile components which constitute an odor have long been a challenge to the chemist. Modern instrumental methods of analysis have now greatly increased the chemists' ability to identify and characterize odors. The tremendous advances which have been made in the characterization of odor by chemical or physical means have accompanied the advances in the processing and preserving of foodstuffs where odor is one of the factors which plays a very important part in the complex of sensations responsible for flavor. The methods of gas chroma-

(Continued on page 818)

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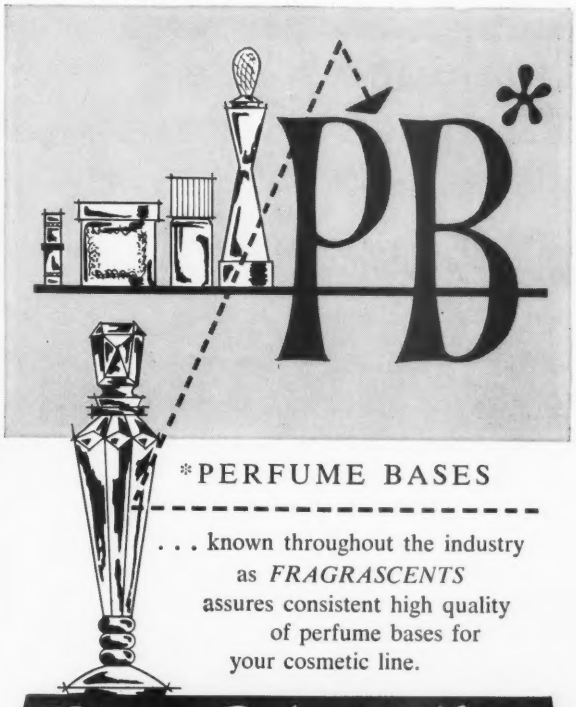

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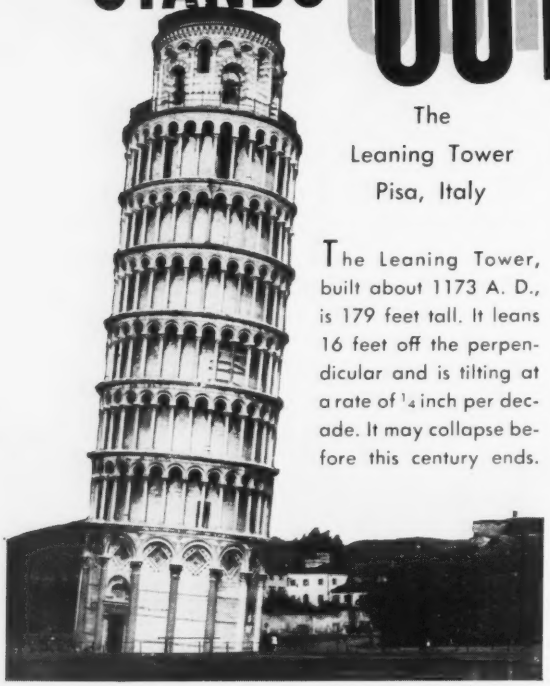

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(Continued from page 816)

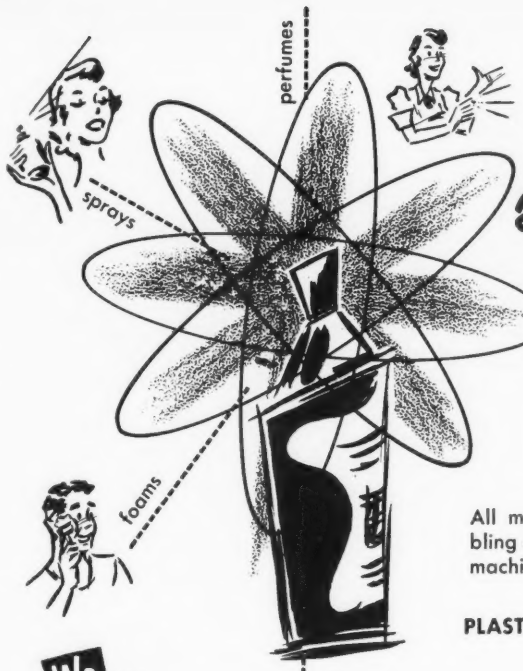
tography and mass spectrometry have proved particularly useful in the identification of volatile components isolated from fruits, vegetables, meat and coffee. The techniques developed to identify the chemical components of food aromas may be extended to permit characterization of the chemicals responsible for the odors arising from other sources such as flowers, plants, insect secretions and air pollutants.

Mechanisms of Enzyme Action was the subject of the paper delivered by **D. E. Koshland, Jr.**, of Brookhaven National Laboratory. All enzymes are proteins and therefore subject to the same denaturing agents as proteins. Heat, *p*H changes, urea concentrations and salt concentrations, can all affect the shape of a protein molecule and, hence, its catalytic activity. It has been found, however, that these protein molecules have considerable flexibility and that therefore they may frequently snap back to their original shape even after fairly serious stresses. Moreover, it has been found that large portions of the protein molecule can be completely eliminated without damaging enzyme action and other large portions can be modified in ways that will alter, without completely eliminating, enzyme action. These facts, together with a comparison of the relative sizes of enzyme and substrate, lead to the conclusion that there is a small area called the active site which contains the main residue of enzyme activity.

While we are a long way from understanding the exact nature of enzymic catalysis, the growing literature indicates that enzymes act by a combination of known chemical principles rather than by any new magical formula.

Morris J. Root and Merlin J. Maury of G. Barr & Company discussed *Corrosion Testing of Aerosol Products*. The oldest and most frequently used method of corrosion testing is the test pack wherein a number of units are packaged, stored at room temperatures and higher for various periods of time, and then opened and inspected. An additional procedure now used in conjunction with the test pack is to analyze the product for metallic contamination which has resulted from erosion of the container.

A new and additional tool now being used is the determination of electrochemical potentials between metallic components of the container, such as iron, solder and tin, in the product under test. Not only can the potential be obtained, but the galvanic current generated can be measured. These measurements can be extremely useful in the interpretation of findings on test pack results. Such explanations of what is actually occurring in the container can guide the selection of inhibitors and changes that are to be made in the containers. •



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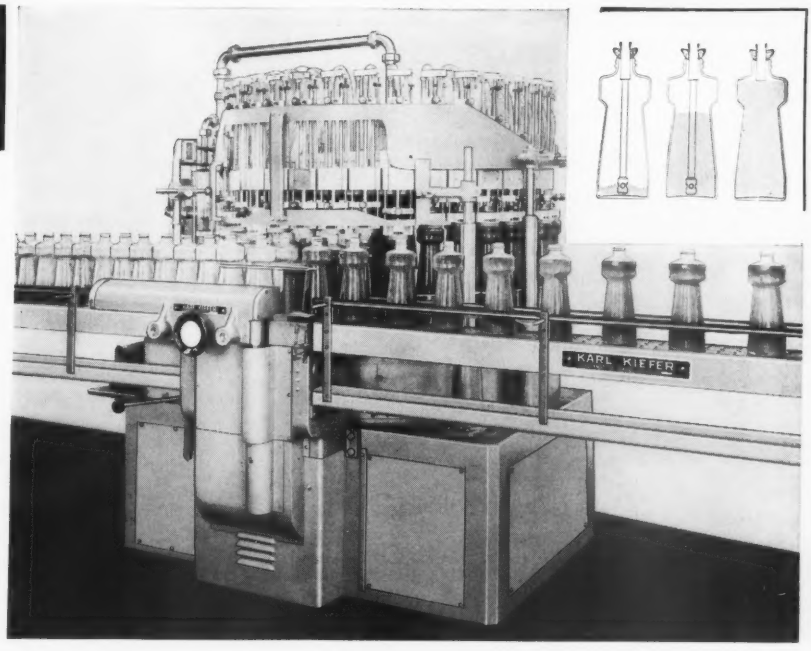

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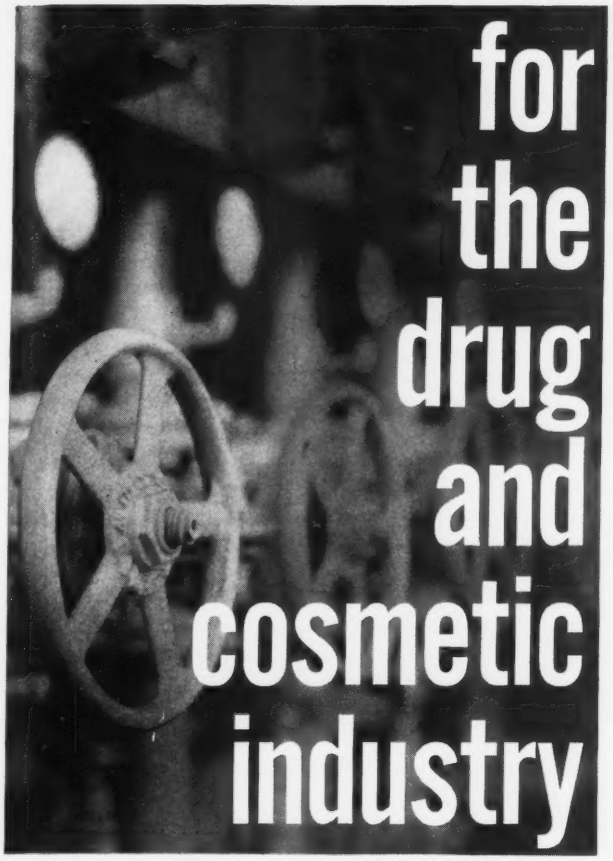

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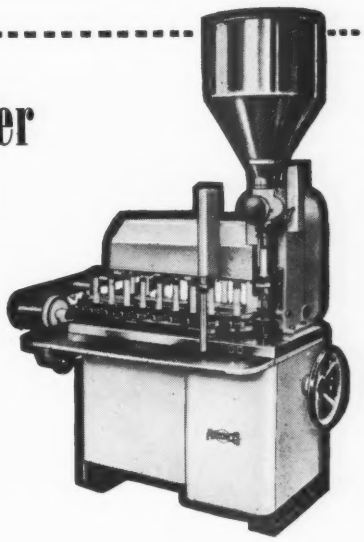

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(Continued from page 743)

partment is expected to do.

On receipt of this note, each department then has its opportunity to raise objections to any part of the program that seems objectionable and, through the liaison, agreement should be brought about.

Initiating memos should always go to the full list of departments mentioned above regardless of whether the liaison man thinks they are interested. Each department should be the judge of its own interest.

After the initial memo has been transmitted and such things as overlapping responsibilities, timing deficiences, or a host of other things have been ironed out, the project can be kept track of by progress reports.

The progress report should consist of such items as the fact that a certain department is finished with its particular part of the program, any unforseen hitches that may have developed, or any deviation from the time schedule, and so forth. Progress reports should be issued at regular intervals, to keep the liaison man on his toes, as well as each department, since progress or lack of it is going to become common knowledge.

This is a basic method. It involves one central clearing house for packaging information. With this system every department in the company knows when something new is going on. Every department in the company knows how things are progressing. And things will progress because there is some one person whose sole job is to see that they do.

So far we have been talking about a system involving a single person with responsibility for liaison. The same system can also be followed with a liaison department. In larger companies there are usually enough packaging projects active to keep a department busy. And an expanding firm would probably slowly expand this department.

Regardless of its size, liaison should report to management or some service department in an organization. This isn't always possible, but it is desirable. The activity is largely a middleman or liaison function of a business. The liaison people should not, if at all possible, be put in the position of being influenced by any one department.

If this activity is to be strictly one of liaison, the person around whom it is to be built can be recruited from almost any part of the business. He could be some bright young fellow particularly qualified in getting along well with people and who can write well. But for the fullest benefits, he should be one trained in packaging. He then can not only run programs through the mill, but also advise all departments on packaging. Such a person would become the natural center of packaging programs.

A third way of solving packaging program problems is through a committee.

In essence, the same system would prevail, except that the committee would meet and all the information would be passed back and forth with everyone

present. All the angles affecting any one project from each department's standpoint could be brought to light and settled at one meeting. The minutes of the meetings would then serve to remind each department of its part in a packaging program.

The committee should consist of members of the sales, advertising, production, research and purchasing departments. In the smaller to good-sized company the heads of these departments should be the members of the committee. In the very large company, top representatives of these departments should be members. The committee should, whenever appropriate, consult with other departments such as medical research, legal, scheduling and administrative. These latter do not at all times have as much direct concern with packaging as the merchandising and producing groups.

This committee should have final authority in anything concerning packaging, and its decisions should not be reversed by anyone but management.

You have probably heard the definition of the perfect committee: it would consist of three people—one out of town and one dead. Keeping the committee small and having top personnel from the various departments as members will make its operations successful. In this day of new merchandising concepts, packaging has come to be something with which top management must concern itself. Also, members who can speak with authority for their own departments can decide directly and make those decisions stick. Too often I have heard my contemporaries in packaging complain about committees made up of personnel too far down the line in the various departments. The committee meets for two hours and goes over eight or ten projects. Each member says something to the effect that the decisions sound alright to him but, he'll have to go back and check a few points with his boss. After everybody goes back and checks with the boss they have to have another meeting and come to a different set of conclusions.

Personally I think the committee method is preferable to liaison, but the choice is narrow, and either is far better than none. Also, either one can be worked. I believe each individual company has to evaluate its own needs in the light of the importance placed on good packaging. Some guides to the choice are the size of the company, the number of products a firm manufactures and, also, whether all operations are under one roof.

The individual liaison man fits best in the smaller operation, although he can fit well in the type of company that only has a few products but does a large dollar volume in all of them. Such a company you might call a large one. Large or small, I believe the individual approach is less valuable if the firm operates at more than one location.

It seems to me that the ultimate in organizing packaging activities lies in a combination, whereby the committee consisting of the heads of the various

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departments of the firm make decisions. One person is needed to take minutes, to keep track of details—in short, to act as secretary. This would be the liaison position, leaving the rest of the committee members free to carry on their own departments. If he is good at his job he can be the catalyst that makes the committee a good working organization. He should be the chairman and control the agenda. He should report, preferably, to some division of management such as the general manager or works manager, or to a service department such as the engineering division. In his committee work he should be a disinterested party, with no special axe to grind with sales or production.

Having a trained packaging man as the liaison for the packaging committee would elimiate all the difficulties the company who was putting out the troches had.

As some organized system begins to function for a company that company will reap benefits beyond keeping out of trouble. And these benefits are perhaps more important from management's viewpoint.

A packaging organization as it develops becomes a creative rather than a preventive thing. This happens merely because through an organized packaging program the different divisions of a firm are brought closer together and have the opportunity to spark ideas collectively.

Probably the packaging production department inherits most of the trouble, since production is the last stop on the line in the journey of a product through a manufacturer's plant. Consequently, it is to your advantage at every opportunity to yell, scream, needle, wheedle and point out what might have been when things go wrong, until you get a system going.

RECENT PATENTS

(Continued from page 758)

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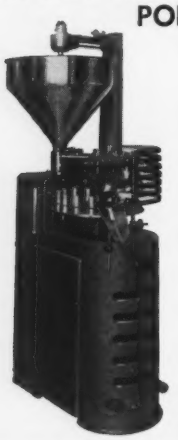

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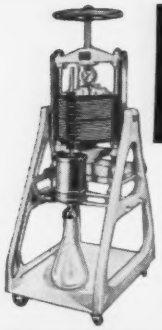

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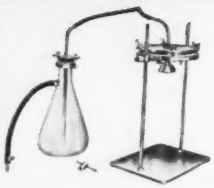

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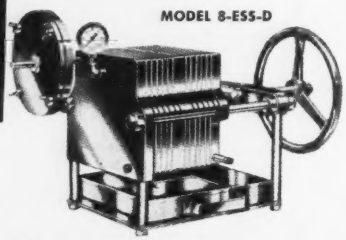

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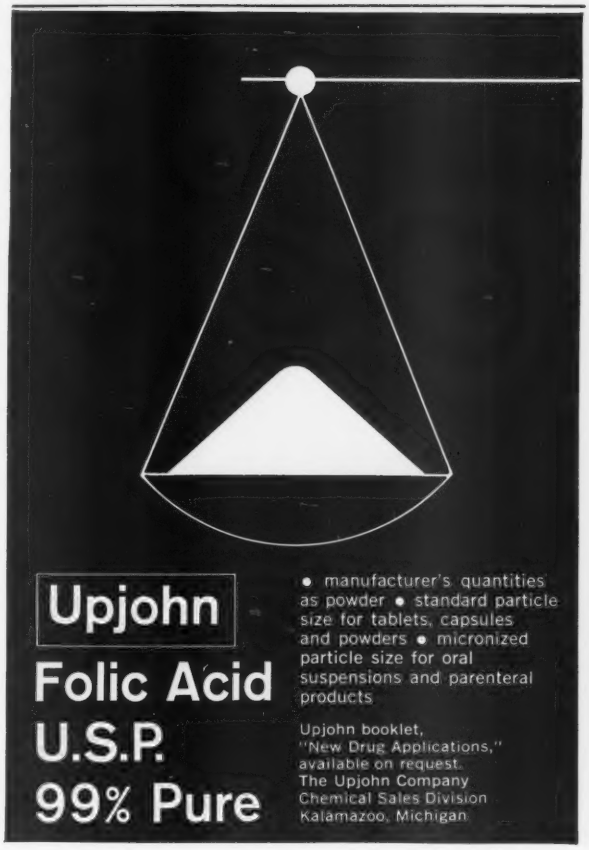
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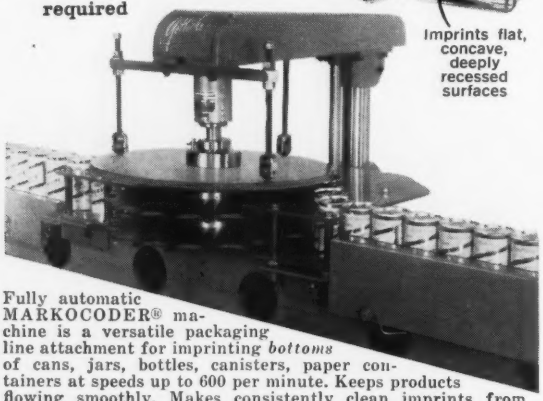

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COMING EVENTS . . . .

JUNE

15-17 **American Chemical Society,** Division of Organic Chemistry, National Organic Symposium, U. of Washington, Seattle (Organic Symposium, Bagley Hall, U. of Washington, Seattle 5, Wash.)

15-19 **Gordon Research Conference** (Lipid Metabolism), Kimball Union Academy, Meriden, N. H. (W. G. Parks, Dept. of Chemistry, Univ. of Rhode Island, Kingston, R. I.)

22-23 **American Animal Health Pharmaceutical Assn.,** annual convention, Hotel President, Kansas City, Mo. (N. M. Ferguson, A.A.H.P.A., 3801 Cullen Blvd., Houston 4, Texas)

JULY

13-17 **Gordon Research Conference** (Chemistry, Physiology and Structure of Bones and Teeth), Kimball Union Academy, Meriden, N. H. (See above.)

20-24 **Gordon Research Conference** (Cell Structure and Metabolism), Kimball Union Academy, Meriden, N. H. (See above.)

20-24 **Gordon Research Conference** (Microbiological Deterioration), New Hampton School, New Hampton, N. H. (See above.)

AUGUST

3-7 **Gordon Research Conference** (Medicinal Chemistry), Colby Junior College, New London, N. H. (See above.)

3-7 **Gordon Research Conference** (Steroids and Related Natural Products), New Hampton, N. H. (See above.)

10-14 **Gordon Research Conference** (Toxicology and Safety Evaluation), Kimball Union Academy, Meriden, N. H. (See above.)

11-13 **Western Packaging & Materials Handling Exposition,** Civic Auditorium, San Francisco

16-23 **American Pharmaceutical Assn.,** annual meeting, Netherlands-Hilton Hotel, Cincinnati, Ohio (Dr. Robert P. Fischelis, 2215 Constitution Ave., N.W., Washington 7, D.C.)

17-21 **Gordon Research Conference** (Food and Nutrition), Colby Junior Collage, New London, N. H. (See above.)

23-26 **National Pharmaceutical Council,** pharmacy education-industry forum, Princeton Inn, Princeton, N. J.

30 **Federal Wholesale Druggists' Assn.,** annual convention (through Sept. 2), Greenbrier Hotel, White Sulphur Springs, West Virginia (R. C. Schlotterer, F.W.D.A., 2 Lexington Ave., N. Y. C. 10)

SEPTEMBER

9-11 **Pharmaceutical Manufacturers Assn.,** International Section, Greenbrier Hotel, White Sulphur Springs, W. Va.

13-18 **American Chemical Society,** national meeting, Atlantic City, N. J. (Alden H. Emery, Executive Secretary, 115 Sixteenth St., N.W., Washington 6, D.C.)

17-20 **Drug, Chemical & Allied Trades Section, New York Board of Trade,** annual meeting, Sagamore Hotel, Bolton Landing, Lake George, N. Y. (Helen I. Booth, D.C.A.T., 291 Broadway, N. Y. C 7)

24-25 **American Society for Quality Control,** Chemical Division annual conference, Shamrock Hilton Hotel, Houston, Texas.

20-23 **The Proprietary Assn. of Canada,** annual general meeting and convention, The Chantecler, Ste. Adele-en-haut, P.Q. (Mrs. Agnes Howard, P.A.C., 252 Eglinton Ave. East, Toronto 12, Ontario)

28-30 **American Oil Chemists' Society,** Hotel Statler, Los Angeles, Calif

OCTOBER

14-16 **Parenteral Drug Assn.,** annual convention, Statler Hotel, N. Y. C.

19-23 **American Public Health Assn.,** annual meeting, Convention Hall, Atlantic City, N. J.

25-28 **Pharmaceutical Manufacturers Assn.,** Financial Section, Greenbrier Hotel, White Sulphur Springs, W. Va.

NOVEMBER

2-4 **Pharmaceutical Manufacturers Assn.,** Research and Development Section, Greenbrier Hotel, White Sulphur Springs, W. Va.

3 **1959 Exposition of Chemical Industry,** Coliseum, N. Y. C. (through December 4)

4-6 **Symposium on Antibiotics,** Mayflower Hotel, Washington, D. C. (Dr. Henry Welch, Director, Div. of Antibiotics, F. D. A., U. S. Dept. Health, Education, and Welfare, Washington 25, D. C.)

16-20 **Fifth International Automation Congress and Exposition,** New York Trade Show Bldg., New York City.

7-12 **Naional Wholesale Druggists' Assn.,** annual convention, Americana Hotel, Bal Harbour, Fla. (Harry A. Kimbriel, N.W.D.A., 60 East 42nd St., N. Y. C. 17)

9-12 **Glass Container Manufacturers Institute,** fall meeting, Arizona-Biltmore Hotel, Phoenix, Arizona (H. W. Kuni, 99 Park Ave., N. Y. C. 6)

12-14 **Gerontological Society,** Statler Hotel, Detroit (Administrative Secretary, Mrs. Marjorie Adler, 660 S. Kingshighway Blvd., St. Louis 10, Mo.)

16-18 **Packaging Institute,** annual national packaging forum, Hotel Statler, N. Y. C. (Charles A. Feld, P.I., 342 Madison Ave., N. Y. C. 17)

17-20 **Packaging Machinery Manufacturers Institute Show,** New York Coliseum, N. Y. C. (Albert R. Stevens, Elgin Mfg. Co., Inc., Elgin, Ill.)

24 **Manufacturing Chemists' Assn.,** Statler Hilton Hotel, New York City (M. F. Crass, M.C.A., 1825 Connecticut Ave., N.W., Washington 9, D. C.)

DECEMBER

1 **Toilet Goods Assn.,** scientific section, winter meeting, Waldorf-Astoria Hotel, N. Y. C. (Kathryn Fitzpatrick, Americas Bldg., Rockefeller Center, N. Y. C. 20)

2 **Synthetic Organic Chemical Manufacturers Assn.,** annual meeting and dinner, Hotel Roosevelt, New York City (Joseph Schaumburger, S.O.C.M.A., 41 East 42nd. St., N. Y. C. 17).

7-9 **Pharmaceutical Manufacturers Assn.,** mid-year and eastern regional meeting, Waldorf-Astoria Hotel, N. Y. C. (J. O. Closs, 30 Rockefeller Plaza, N. Y. C. 20)

7-9 **Chemical Specialties Manufacturers Assn.,** annual meeting, Mayflower Hotel, Washington, D.C.

7-10 **American Medical Assn.,** clinical meeting, Dallas Auditorium, Dallas, Texas

9 **The Proprietary Assn.,** Research and Scientific Development meeting, Hotel Roosevelt, New York City (Dr. Howard A. Prentice, 810 18th St., N.W., Washington 6, D.C.)

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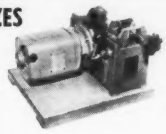

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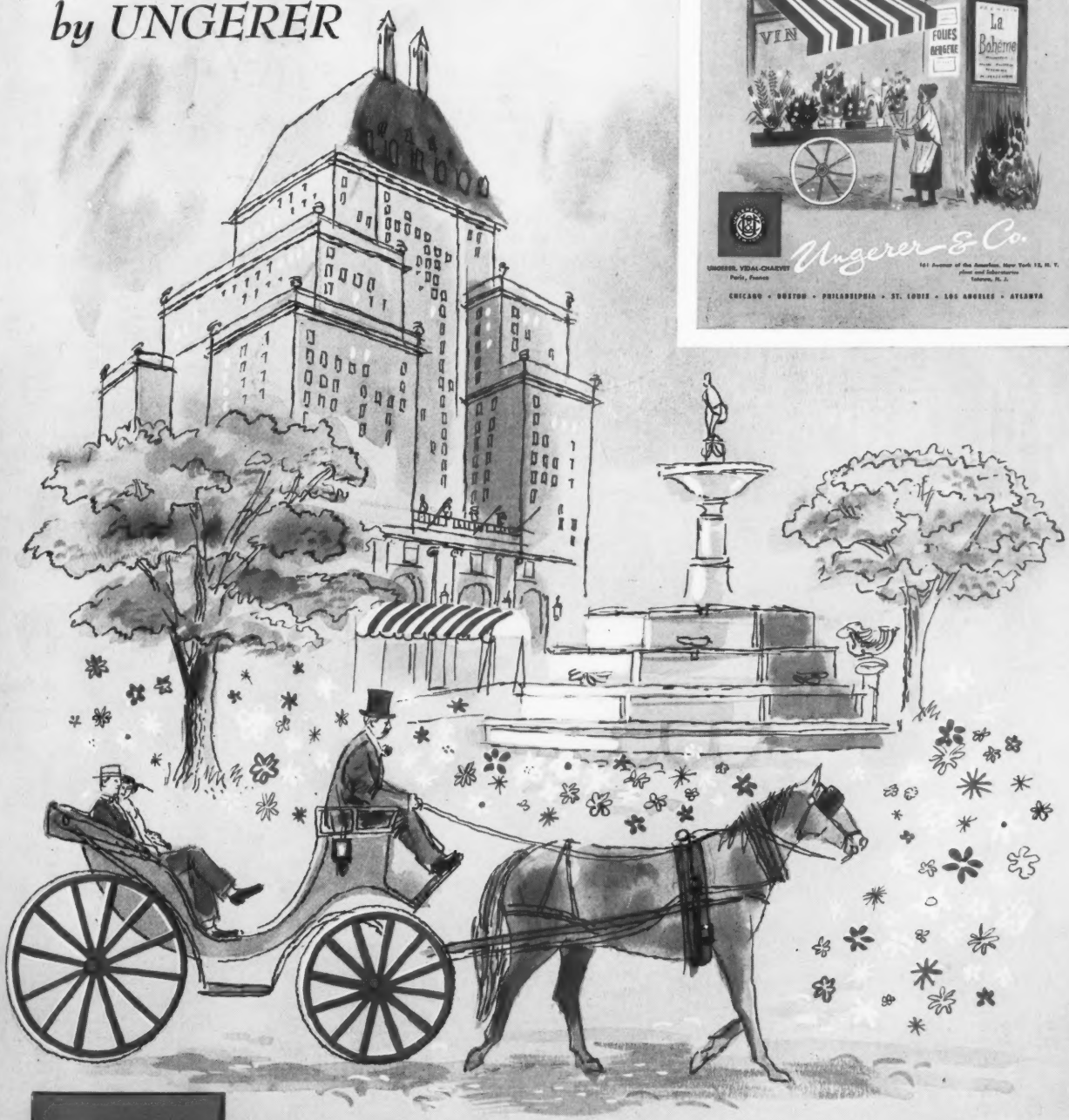

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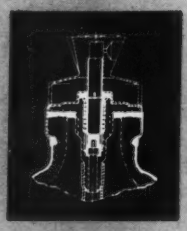

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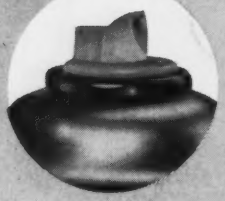

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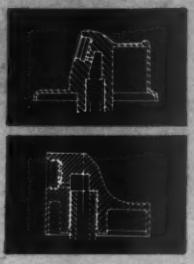

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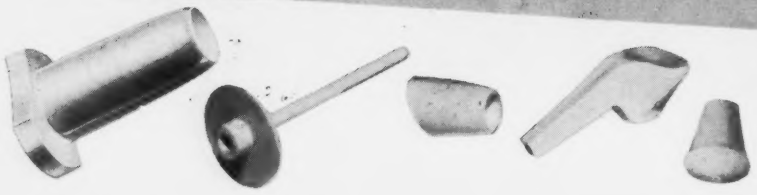

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